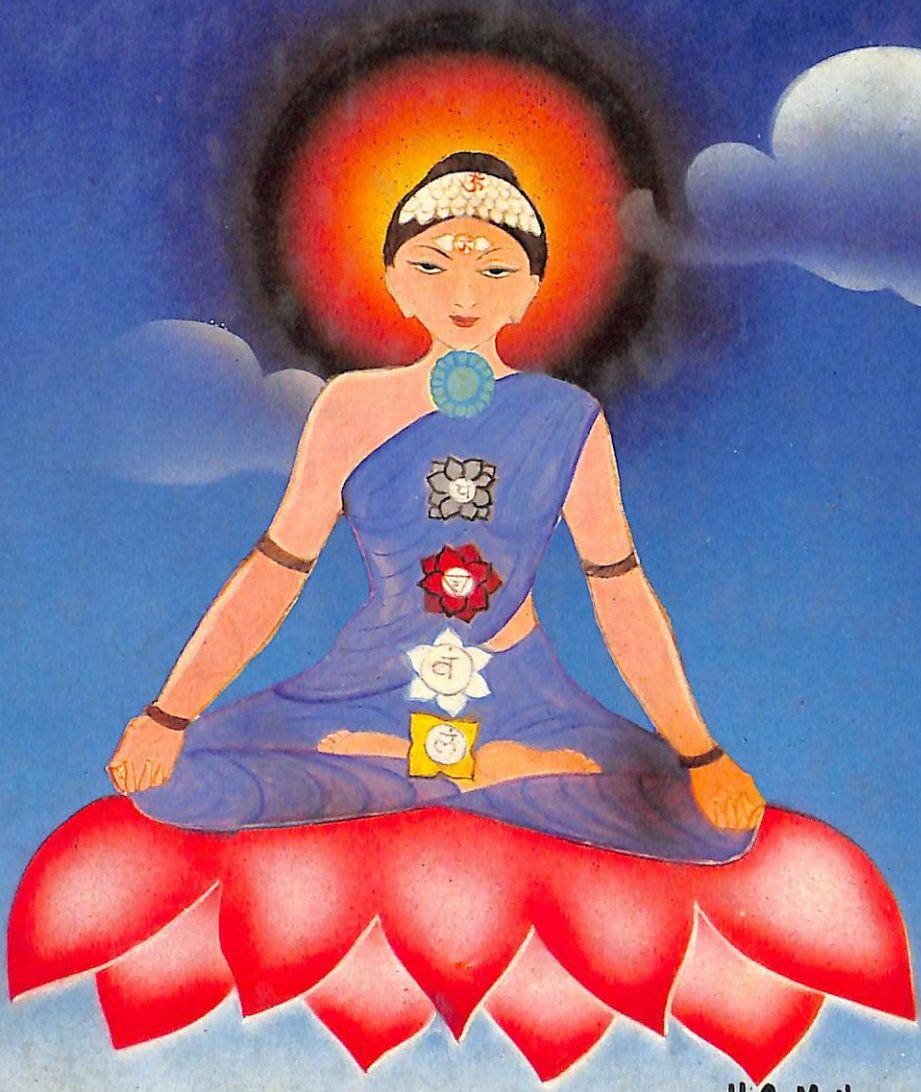
The Science of Awakening Consciousness



H.C. Mathur

The Science of Awakening Consciousness

(OUR ANCIENT WISDOM)

H.C. Mathur

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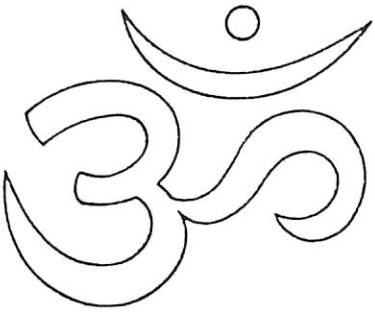

The science of Awakening Consciousness

(OUR ANCIENT WISDOM)

About this book.....

This book attempts to break the barrier between rational scientific thought and the dogmatic beliefs of our ancient mythology. In order to be convincing, the wisdom contained in the ancient mythology is not only to be explained in lay-man's language, but also correlated to modern scientific principles. In fact Science and Mythology are not two different mutually exclusive disciplines of learning, but merely two different languages for describing the same reality. After all, the human brain is the common hardware, with common reflexes, intuitions, inspirations and aspirations. Programmed either in the language of reason or by the aphorisms of devotional faith, the output is always the same-the identity of Self.

This book describes the mythological concepts of "Brahman", "Avidya", "Maya", "Purusa" and "Prakriti" systematically in scientific terms, leading to the practical aspects of Raj-Yoga and an understanding of Yogic Siddhis. It ends in the concept of Nirvana with some interesting quotations from our ancient scriptures. It is expected to be of interest to the modern educated mind looking for some logic and order in the chaotic world it faces every day.

The Science of Awakening Consciousness

About the author...

H.C. Mathur, the author of this book is a telecommunications engineer who currently (1990) is the Adviser (Human Resource Development) in the department of Telecommunications, Government of India. Born in 1932, Mathur graduated in Physics from St. Stephens's College of Delhi and then pursued his engineering education at Indian Institute of Science, Bangalore. He is a member of the Indian Telecommunications Service of the central government and has served in this capacity in many branches of the department of telecommunications in different parts of the country. He has travelled extensively both in India and abroad working in the field of high technology telecommunications. He was appointed as an expert of International Telecommunication Union under the United Nations to serve in the friendly islands of the Kingdom of Tonga. It was in this pacific country that Mathur became interested in Indian mythology and did extensive reading and research on Patanjali's Yoga Sutras and the Upanishads. Combined with his basic knowledge of fundamental physics and information theory, he has been able to interpret the obscure mythological concepts of the phenomenon of life and the planes of consciousness in terms of scientific principles of information carrying vibrations. The author hopes that this book will prove to be interesting and informative to students with a scientific bent of mind who are equally curious about the occult teachings of Indian mythology.

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ACKNOWLEDGEMENT

My acknowledgements are due to the saints, sages and seers of India whose published discourses have inspired this thesis. In the physical plane I am indebted to the authorities of the Advanced Level Telecommunications Training Centre, Ghaziabad for giving me the working facilities particularly the use of a word-processor on which I have prepared this manuscript. I am indeed indebted to Sri Umesh Verma, artist of this centre for preparing the drawings which appear in this book.

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DEDICATION

This book is dedicated to my dear wife MADHUR whose unshakable faith in the supernatural and whose innocent mockery of the scientific and the intellectual led me to look beyond material existence for something more fundamental. But for her constant support, sympathy and understanding this work could not have been completed in my free time at home.

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Preface

"Enrich yourself by the acquisition of wisdom,
Then act and perform deeds of superb quality
In the spirit of dedication."

Sama Veda 189

Our ancient wisdom is all enshrined in Sanskrit. Sanskrit is a very concise language. A line of Sanskrit text can take a whole paragraph of English for a comprehensive translation. Even then the interpretation may differ for different themes. The Bhagvat Gita, the Vedas, the Upanishads or the Yoga-Sutras of Patanjali, they are all epic poems which consist of short verses of Sanskrit known as aphorisms. Much before the Christian era, the Indian philosphers meditated and discovered the reality behind life, the principle of the working of the mind and the cause of the total existence. They narrated their experiences in short Sanskrit aphorisms. Their disciples memorised these aphorisms and sang them as epic poems from generation to generation till they could be written down and recorded in the language of current use. These epic poems have been interpreted according to the knowledge and customs prevalent in each generation. They have become the guidelines of social behaviour and morality. The Vedas and Shastras have emerged from the fundamental knowledge gained by our ancient 'seers' who achived marvels in 'meditation', 'self- realisation', 'God-realisation', and Nirvana.

Sanskrit as used in the aphorisms of the epic poems of our scriptures, lends itself to a wide variety of interpretations. Each word, nay each character of this language embodies in itself a complete concept: an idea with a sensory image, a memory and the associated emotion behind it. The Sanskrit scholars who have interpreted the ancient literature have generally belonged to different sects of Hinduism and so this great wisdom of pure philosophy and science has come to be regarded as a doctrine of Hindu religion and mythology. In the modern scientific age deprived of the traditional practice of self-discipline and meditation, the mythology has been relegated to the background as fiction and blind faith having no scientific value. Unfortunately few

Sanskrit scholars of modern age have belonged to scientific discipline. Few scientists, on the other hand, have learnt Sanskrit to the extent of interpreting the ancient literature in the modern scientific language. This has been our weakness. The author himself is a Communications Engineer and he announces the book to be scientific interpretation of ancient Hindu mythology. The glare of modern technology is constantly pushing back our old knowledge and philosophy till we may forget it altogether.

This is a serious threat to our ancient wisdom - a threat to the extent of its total elimination, a threat which may cause the complete loss of this magnificent heritage of our tradition and culture. Yet there is hope. For, when the glare of technology overtakes moral values, the society is trapped in conflicts; conflicts between intellect and personalities; conflicts between morality and convenience. Then one is forced to revert to the scriptures. Peace of mind is ultimately found in the scriptures and not in technology.

I became interested in theosophical literature about a decade ago when I was posted as a U.N. expert in an island of the South Pacific. There, under the southern sky, I read a number of books on theosophy and on Hindu mythology. I am no scholar of Sanskrit and so had to rely upon authentic English translations. My own education had been in the fields of Physics and Telecommunication engineering. But soon I realized that there was a wealth of wisdom lying hidden in our mythology which could stand the test of scientific scrutiny. Our scriptures, I found, were not unscientific; nor was science divorced from our ancient wisdom. There was only a gap in our understanding of the scriptures and their interpretation in scientific terms. Fortunately the latest knowledge in the field of computers and telecommunications makes it much easier to bridge this gap.

Thus prompted, I set out to study our mythological literature in an attempt to interpret it, once again, in the language of modern science (wave mechanics, to be more specific). With my knowledge of Physics and electronics I was able to find many equivalents amongst the entities of the Scriptures and modern scientific principles. I was even able to explain some of the more obscure aphorisms of Patanjali's Yoga

Sutras in scientific terms. For this I used the principles of wave theory and signal multiplexing in telecommunications. Similarly many aphorisms of the Upanishads and some of the abstract descriptions contained in the Bhagvat Gita became quite clear in terms of wave mechanics. (A complete interpretation of Patanjali Yoga Sutra in scientific terms is contained in my earlier book entitled "Patanjali's Model of Human Mind")

Starting with void as a logical beginning, we visualise Brahman as a state of harmonious balance between pairs of opposite entities. It is a state of maximum entropy, having space-time symmetry. Then, under the limitations of space and time (Avidya), that is, a perception confined to three positive dimensions of space and one advancing dimension of time, the manifestation that would take place can be analysed as a spectrum of superimposed vibrations. Proceeding on these lines I was soon able to construct comprehensive scientific models of such mythological terms as PURUSA, PRAKRITI, RAJAS, TAMAS, SATTVA, etc. The modern techniques of modulation and information processing used in radio communication came in very handy to explain the principle of life and the functioning of the mind.

Taking the analogy of electro magnetic radiation one can visualise that the concept of BRAHMAND manifesting out of a perfectly balanced state of dynamic equilibrium BRAHMAN, is something like detecting intelligence, voice and music from a perfectly balanced and silent radio wave. The concept of AUM, for example, as the envelop of all that exists, could be interpreted as a spectrum of vibrations with an infinite amount of information and energy inherent in it. This huge amount of information and energy depicted by SIVA and SAKTI is inherent in the perfect balance of BRAHMAN. Once the balance is disturbed (due to our limited perception or Avidya), the information and energy manifest and give the illusion of a universe (Maya). Just as the radio receiver detects music and voice from a perfectly silent radio wave, in the same way the human mind detects, from the balanced state of NIRGUNA BRAHMAN a colourful and dynamic state of SAGUNA BRAHMAN. Once detected, the sense organs select specific vibrations which resonate in the brain to develop emotions and

mental concepts. This universe of sensations, emotions and intellect then becomes the reality and we forget the all inclusive spectrum AUM which, in fact, is the ultimate truth.

This concept is made clear in the Gayatri Mantra, which directs us to revert back to the ultimate truth, in order to enlighten our consciousness and to understand the totality. The Mantra runs as follows:

ओंऽम
भूर्भुवः स्वः ।
तत् सवितुर्वरेण्यम्
भर्गो देवस्य धीमहि ।
धियो यो नः प्रचोदयात ।।

AUM
BHUR,BHUVA, SVAH
TAT SAVITUR VARENYAM
BHARGO DEVASYA DHIMAHI
DHIYO YO NAH PRACHODAYAT

The religious translation of the Mantra, as given in the Gayatri Rahasya by His Holiness Sri Prabhu Ashrit Swamiji, is as follows:

> Om, Who is dearer than our breaths, is Self-subsistent, All knowledge and All Bliss. We meditate upon that adorable effulgence of the resplendent Vivifier of the Universe, Savita. May He Illuminate our Intellects unto the right path.

However, a more meaningful translation, in the language of our day-to-day experience and scientific knowledge, could be attempted as follows: (See also Chapter XII)

> Oh! the source of all creation, manifesting through our senses, emotions and intellect, You are that wonderful infinite spectrum of

cosmic radiation upon which let us
meditate, to enhance our consciousness to
understand the total reality.

The second translation is also literal. We can stretch the diversity of Sanskrit terms and arrive at a scientific explanation of the idea contained in them. Here the words BHUR, BHUVA and SVAH have been taken to mean the three planes of our consciousness, that is, the planes of sensations, emotions and intellect. These are the different bands of vibrations produced in the brain by nerve impulses. The brain handles only vibrations of nerve impulses and nothing else. The entire universe of our perception is nothing but a jumble of vibration patterns in the brain. This is a difficult concept to understand, but once realised, the rest of the theory becomes lucid. The complete spectrum of vibrations would then contain the total creation and its entire knowledge. As we expand the band width of our individual consciousness by meditation we increase the scope of vibrations which our brain can handle till we become aware of the total reality. That is the essence of Gayatri Mantra.

In the following chapters I have described the principles of many abstract entities of our scriptures such as Brahman, Avidya, Maya etc. The explanations are based upon the mechanics of super imposed vibrations. For a communication engineer the explanations would be obvious. For others I have attempted to give short and more general explanations of the principles involved. The principles could be accepted as facts of science and mathematics which have been proved independently. I have tried to explain the mythological concepts through diagrams giving the equivalent scientific explanations supported by graphs and charts. In the end I have given a few aphorisms from selected scriptures of Hindu mythology with their scientific explanation to show how reasonable and logical the scriptures are and how our ancient teachers have realised these truths and laid a clear path to be followed by the human race at different stages of its development.

This book is expected to be of particular interest to readers with a scientific background who are curious to know about our ancient wisdom.

H.C. Mathur

CHAPTER I

THE CONCEPT OF BRAHMAN

BRAHMAN is the first concept of Hindu mythology, the highest amongst the Hindu Gods and Goddesses. In fact Brahman embodies them all. In philosophical terms Brahman is the most fundamental of all entities. All the other entities emerge from Brahman, they reside in Brahman and finally perish in Brahman. Brahman embodies all. He is the beginning and the end of all manifestation. All that we perceive through our senses, all that we feel through our emotions and all that we think through our intellect is already contained in Brahman. Every conceivable entitity, anything that we can imagine is already present in Brahman. Brahman has no beginning and no end. Brahman always 'is' in eternal 'now'. The space and time of our perceptions exist in Brahman, all through and always. Brahman is infinite and eternal.

The Mundaka Upanishad has described Brahman in a beautiful manner thus:

> "Brahman is all in all. He is action, knowledge, goodness, supreme. To know him, hidden in the lotus of the heart, is to untie the knot of ignorance".

> "Selfluminous is Brahman, ever present in the hearts of all. He is the refuge of all He is the supreme goal. In Him exists all that moves and breathes. In Him exists all that is. He is both that which is gross and that which is subtle. Adorable is He. Beyond the ken of senses is He. Supreme is He. Attain thou Him."

> "The self-luminous, subtler than the subtlest, in Whom exist all the world and all those that live therein - He is the imperishable Brahman. He is the principle of life. He is speech, and He is mind. He is real. He is immortal. Attain Him O my friend, the only goal to be attained."

From this comprehensive and inspiring definition of Brahman let us try to analyse, in simple terms, the true nature of Brahman. Let us try to evaluate Brahman on the basis of what has been described above.

VOID: A STATE OF PERFECT BALANCE

If Brahman is all in all and contains every conceivable entity, then He must embody in His totality all objects real or imaginary including all our thoughts and feelings. He must carry all qualities and attributes, good or bad. For everything good Brahman must also have something euqally bad. For every positive entity there must exist an equal and opposite negative entity. For every action there must be an equal and opposite reaction. Thus Brahman must contain, in His totality, a complete balance of equal and opposite entities. For every perception, for every thought, for every action, there must be, in the body of Brahman, its exact opposite which would cancel it. Hence, added together all these entities must always cancel one another leaving no residue whatsoever. For if there be a residue, there must also be, somewhere in Brahman, its exact opposite counterpart to cancel it. The sum total must always be zero or void. Every force of nature must be cancelled by an opposite force; every positive electrical charge must find a negative charge to neutralise it; every pattern of waveform must be wiped out by a waveform of identical shape but opposite in phase; every particle of matter must have an anti-particle to cancel it. Similarly every expression of love must be accompanied by an equal amount of hate; all richness must be balanced by abject poverty; all desires cancelled by aversions; all friendship by enmity. The true nature of Brahman is, therefore, a state of void, a cipher or a mathematical zero. He has no material, no qualities, no attributes whatsoever. He is then called NIRGUNA BRAHMAN, meaning, Brahman with no Gunas, no identifiable attributes.

MANIFESTATION OUT OF VOID:

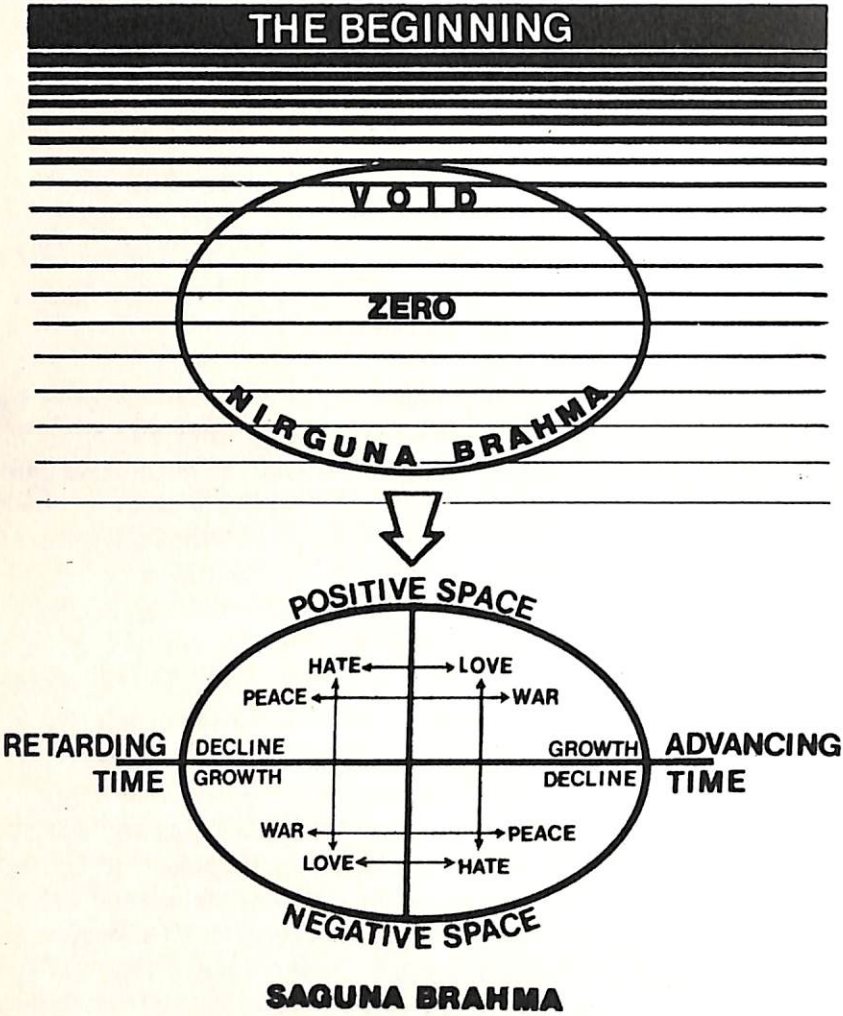
If Brahman has no Gunas; no attributes, no material then how do we see a universe full of colours and sounds with all the material properties? Whence come the mountains, the rivers, the vegetation and the human life? How energy and forces of nature materialize out of nothing? How is life created with all its experiences and emotions?

The answer lies in the fact that we never perceive Brahman in His totality; We perceive only a part of him. It is our ignorance or our lack of total perception that results in a manifested universe of colours and sounds where-in actual fact, there is nothing. This partial view of Brahman which we perceive leaves many entities uncancelled and these entities then manifest into a universe of colours and sounds such as we see around us. It is our own limitation or ignorance (Avidya) which is responsible for this perception. It is a limited universe limited in space and time; limited in its range of perceptible entities, limited in all attributes which together form Brahman.

As an example let us take the visual universe of scenary and colour. It is confined to the visible band of electromagnetic spectrum; a narrow band confined between the infra-red and the ultra-violet lights. Similarly the universe of sounds and music is limited in its range to the few vibrations which are audible; sandwiched between the sub-sonic and super-sonic ranges. The same is true of the limits of our perception in regard to temperatures or pressures or our sense of time, the past and the future. Beyond lie infinite universes of similar attributes which we do not perceive and hence we are not aware of them. Yet in the limited range of our perception we see an infinite number of entities, hear an infinite selection of voices and music and experience an infinite variety of feelings and emotions. All of this perceptible universe is only a part of Brahman which has not been neutralised by its equal and opposite counterpart due to the limited range of our perception. If we could perceive the whole, every entity would meet its counterpart and dissolve into void. In the absence of such a wide perception, however, this infinite universe is full of attributes, colours and sounds. It is built up in our mind due to our own ignorance. It is called SAGUNA BRAHMAN.

Brahman is always infinite and eternal. So are both His aspects SAGUNA and NIRGUNA. The fact that Saguna Brahman manifests out of Nirguna Brahman does not make Nirguna Brahman finite. Infinity taken out of infinity still leave the balance as infinite. Isha Upanishad has described this phenomenon as follows:

"That is whole, and this is whole.
The perfect has come out of the perfect.
Yet, the perfect remains, as before, perfect".



The beginning

In the beginning there was void - nothing - a mathematical zero - Nirguna Brahman. Viewed in space and time, Brahman was a harmonious mix of pairs of opposites; peace here - war there; love today - hate tomorrow; growth this time - decline sometime later. In the infinite continuum of space-time the multiple Gunas of Brahman merged into one another leaving no perceptible attributes at all. It was a case of maximum entropy with opposite events all present with equal probability of occurrence.

How can a material universe manifest out of void? How can energy and matter be created out of nothing? In order to understand this mystery let us consider the example of a bank which starts its business with no money or zero capital. Suppose five persons deposit Rs.1000.00 each in the bank. The bank now has a capital of Rs. 5000.00. Its liability is also Rs.5000.00 hence its total assets are still zero. Suppose the bank loans Rs.5000.00 to a farmer at 10% interest. The farmer buys buffaloes and sells milk. At the end of one year the farmer returns the loan with interest, a sum of Rs.5500.00. The bank pays 5% interest to its depositers, a sum of Rs.250.00. The bank now has a net profit of Rs.250.00. So some money has come out of nothing. The bank has earned something, the farmer has also earned and the depositers got their interest money. Everybody has become richer. But is it really so? If we take a larger view of the whole situation we would find that the bank's profit of Rs.250.00 is the compensation of the banker's effort to mobilise money and arrange loans. The interest gained by the depositers is the loss of benefit suffered by them in not using their capital of Rs.1000.00 each for one year. The farmer has sold milk more than the cost of the buffalo. Overall the costs and benefits have actually cancelled one another and the sum total has remaind zero.

Yet, if we confine our attention only to the resources of the bank ignoring the depositers and the farmer, we would see money materialising out of nothing. This is our ignorance or the limitation of our perception.

The phenomenon of manifestation of this universe from void is similarly a case of our ignorance or a limited perception. Brahman is always void or a mathematical zero. By stretching His limbs and looking at His individual aspects ignoring His totality, we can manifest a perception of our choice without disturbing His overall personality which remains always void. Mathematically we can express Brahman as the right hand side of an equation like this:

$$(a^3 + b^3 + c^3 + ...) - (a + b + c)(a^2 + b^2 + c^2 + ... - ab - bc - ca - .....) - 3abc... - .... = 0$$

Here the left hand side of the equation carries a number of variables a, b, c etc., which can be any number entities with any

magnitude whatsoever. So long as these entities are distributed in the fashion shown in the equation, the sum total will always be zero. Each of the entities could be any attribute such as colour or sound. Then each factor of the left hand side of the equation will depict a manifested environment of colours and sounds as we see around us. So long as we see only one factor we believe there is a universe around us. But if we take into account all factors of the equation then, suddenly the universe collapses and only void remains. In the same way Saguna Brahman has an infinite number of attributes which manifest to form our universe but which are distributed in such a way that the overall picture will always be void or Nirguna Brahman.

ENTROPY:

Scientists who study nature find that objects exist in nature due to a certain orderliness in the distribution of matter. This orderliness is under a state of tension due to the action of a set of unbalanced forces. If the forces are balanced the tension gets relaxed and the matter tends to redistribute itself in a more random manner. Just as small children left in a tidy room will soon jumble up eveything so does nature proceed to randomize any orderliness or fixed arrangement of things. The disorder always tends to increase in the natural course. In scientific terms this increase of randomness is known as increase of Entropy. Entropy is the degree of randomness that exists in any system. In the natural courses the system changes in such a manner as to increase the Entropy. When Entropy becomes maximum the system vanishes altogether into void. The following quotation from "The Universe and Dr. Einstein" will illustrate the point":

> "This universe is thus progressing towards an ultimate heat death or as it is technically defined a condition of maximum entropy. When the universe reaches this state some billions of years from now, all processes of nature will cease. All space will be at the same temperature. No energy can be used because all of it will be uniformly distributed through cosmos. There will be no light, no life, no warmth- nothing but perpetual and irrevocable stagnation. Time itself will come to an end. For entropy points the direction of time. Entropy is the measure of randomness. When all systems

and order in the universe have vanished, when there no longer is any sequence of cause and effect - in short, when the universe has run down - there will be no direction to time, there will be no time. And there is no way of avoiding the destiny."

MACRO AND MICRO VIEWS:

As a practical proposition let us have a close look at our environment. We see different objects such as books, furniture etc., made up of common materials (paper, wood etc.). Looking more closely we find that the materials are made up of molecules and atoms. The atoms, in turn, are made up of fundamental particles such as electrons, protons, neutrons etc. It is the arrangement of fundamental particles which defines a particular atom or a material. One arrangement makes it wood; another paper. If this arrangement is broken, the material changes or dissolves altogether. Now in this arrangement, the material particles occupy very little space; bulk of the atom is an empty space. Even the fundamental particles have their counterparts and if the two meet they would cancel and vanish altogether. It is the absence of the counterparticles in our limited field of view that projects the materials and ojects around us. In totality it will always be void. This is the micro-view of total existence and we find that it is, in its limit, only void.

Similarly if we take the macro-view of the universe around us we find that our earth is a part of the solar system which, in itself, is a tiny spec in one of the galaxies known as the Milky Way. There are billions of such galaxies distributed all over the space. Yet the space is practically empty. The total matter of galaxies put together is negligibly small in the vastness of the space. The average density of matter in space is so low that it can hardly be distinguished from perfect vacuum. If the total matter of space were uniformly distributed we would find less than one gram of matter in a cubical space box one hundred miles long, one hundred miles wide and one hundred miles high! What could be a better examples of void? This is the macro-view.

So whether we take the micro-view or the macro-view, the truth always seems to lead to void as the real and eternal state of existence.

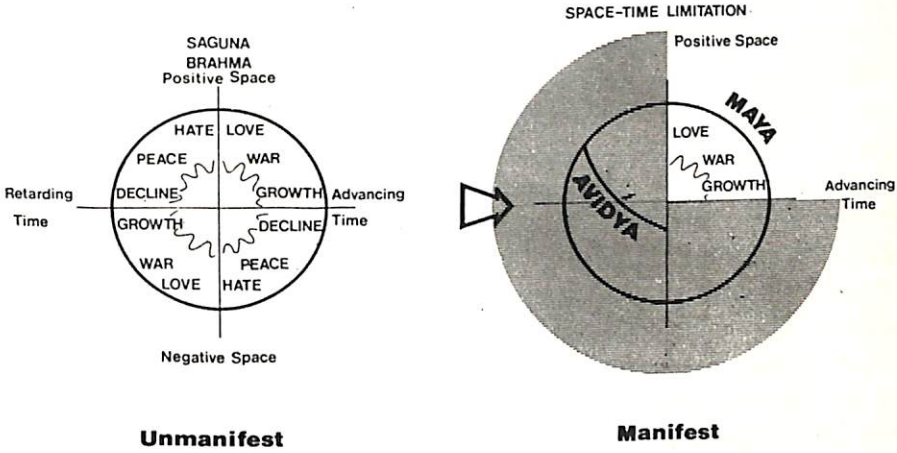
This void is the true nature of Brahman. It is the ultimate reality or the absolute truth. In the theosophical terms Brahman is designated as the ABSOLUTE which has its two aspects MANIFEST and UN-MANIFEST- SAGUNA BRAHMAN and NIRGUNA BRAHMAN.

Realising Brahman is the highest knowledge we can attain; merging in Brahman is Nirvana or Kaivalyam, the highest goal to achieve.

O Brahman Supreme!
Formless art thou, and yet
(Though the reason none knows)
Thou bringest forth many forms;
Thou bringest them forth, and then
Withdrawest them to thyself.
Fill us with the thoughts of thee!

- *Svetasvatara Upanishad*

AVIDYA



Avidya

Man is a creature of space-time, encapsuled in a limited frame. He perceives only positive space and advancing time. He is ignorant of the rest. Shrouded in this ignorance (Avidya),he perceives a manifestation in the ever-unmanifest. This is our universe, the Saguna rupa of Brahman. He sees Sristi in time but does not live long enough to see Pralaya. He believes in what he perceives and enjoys life in this limited perception. In actual fact it is only an illusion : Maya.

CHAPTER II

THE CONCEPT OF AVIDYA

In the previous chapter we have seen that the ultimate reality is always void. Void is designated, in mythology, by the term Brahman. Brahman represents a state of dynamic equilibrium or a state of harmonious balance in which all entities exist in pairs of opposites so they always cancel one another resulting in void. So long as this balance is maintained there can be no manifestation of any qualities or attributes and hence Brahman remains Nirguna. If, however, the balance is disturbed somehow,and the pairs of opposites are seperated from one another, then in the limited field of perception, there can be manifestation of a variety of attributes forming a universe of colours and sounds. Brahman then *becomes* Sagun. We have also seen that the cause of such a manifestation is Avidya or the limitation of our own mind. But the mind is also a part of this manifestation and hence emerges as its own limitation. This is a chicken-and-egg problem which needs a more detailed examination. The exact mechanism by which a part of the balanced entity takes the role of an intelligent observer and starts observing the rest of the entity as its object of interest, is the subject of this chapter. To recapitulate we can summarise the overall argument in the following words:

> "The beginning and the end of this universe is void. So also is its present status. The objects and events we see around us have no real existence. They are an illusion. They exist only in our mind, created by the mind and our sense organs. Our senses have a limited perception. They cannot perceive the whole, and therefore,can only present a partial picture to the mind. The mind becomes a victim of ignorance. It interprets the sensations as material objects constituting the universe. Incomplete perception manifest a whole sequence of objects and events out of a perfectly balanced state of dynamic equilibrium.that is, void. The body and the mind which appear as Self, are also part of this illusion. Once ignorance is removed, the distinction be-

tween self and non-self vanishes. The manifested universe merges with the vast unmanifested reality. The sum total is always zero. Void is the only reality, the absolute truth."

STARTING WITH VOID:

Void is a good starting point. We begin the story with a clean slate. We do not have to answer the question what came first and how. To say that life came from outer space or that the universe was formed out of the primordial soup is not enough. For then we have to answer the question what was there before the primordial soup and how this soup came into existence. Void does not need a beginning or a reason to be so. It is quite rational to say there was nothing to start with in the beginning. The only question we have to answer is how the physical matter with forms and colours has emerged out of void. The manifestation of a universe out of void, evolution of intelligent life and the mechanism of its experience in its environment are subjects covered under the general title of Avidya. Mundaka Upanishad says:

> "The whole universe is a manifestation and product of that universal, formless, causeless Being. The sun, moon and all the quarters, all knowledge, and the souls of all existing beings are parts and manifestation of that single all-imminent Being. All life and all qualities, functions and activities are forms of a single energy. He is the fire which has lighted the sun and makes it burn, like a log burning in the fire. Thereby does the sun give us warmth and light. The rain does not rain but it is He that rains through the clouds. Beings come together and multiply, but it is He alone that multiplies through them."

AVIDYA:

Patanjali defines Avidya as one of the five 'Kleshas' or distractions of the mind which together bring about this manifestation of a perceptible universe.

> अविद्यास्मितारागद्वेषाभिनिवेशाः क्लेशाः ।

> Avidyā-asmitā-rāga-dveṣa-abhiniveṣāḥklesah.

Yoga-Sūtra II-3

(The lack of awareness of Reality, the sense of egoism or 'I-am-ness', attractions and repulsions towards objects and the strong desire for life are the great afflictions or causes of all miseries in life.)

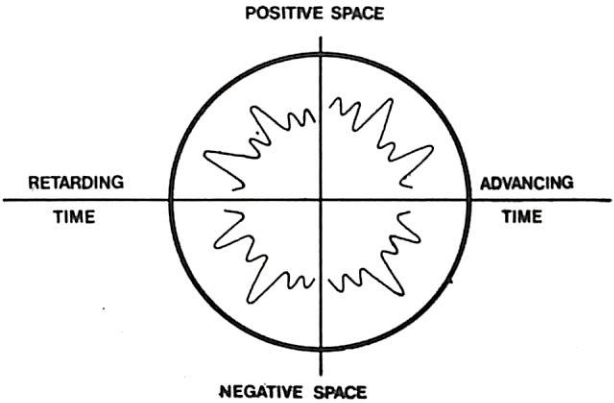
Avidya first sets the frame of reference by confining the scope of perception to three dimensions of space and one dimension of time. This disturbs the balance of void and manifests a cosmos under this limitation. Asmita then takes over and sets up, in this cosmos, a process of subject-object relationship. A part of the cosmos acquires the identity of a Self or 'I-am-ness' and starts observing the rest of the cosmos as an object. The patterns of cosmos contained in the Self are then compared with similar patterns in the rest of the cosmos. If the patterns agree the Self experiences pleasure (Rag); if they disagree, the experienceis one of pain (Dvesa). The mechanism built up to match patterns is a living brain. It is a part of the cosmos which is closely linked with the Self. The affinity between the Self and the brain results in an instinct of survival which gives rise to a fear of death (Abhinivesa). The five stages of evolution take place in every living being, human or animal.

The above explanation is somethat obscure and difficult to understand. Let us try to analyse the process, step by step, more scientifically using our knowledge of information carrying vibrations. Readers who are not familiar with the principles of wave mechanics or have no idea of the laws of radio transmission and reception will have to take for granted the facts outlined in the next few paragraphs. I may assure them that these are scientific facts which are frequently used in communication theory and have been experimentally proved to be correct.

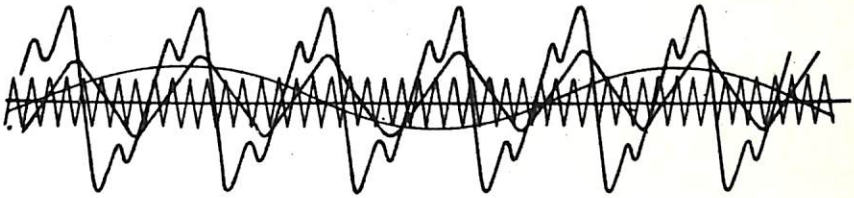
FOURIER'S THEOREM:

We have seen that void represents a perfect balance of equal and opposite entities.If we try to visualise void under the limitation of space and time, we shall find that every pattern in positive space will have its mirror image in the negative space. Similarly every pattern in time dimension will be followed by its exact opposite in the subsequent cycle of time. Thus when we limit our view in the positive space and advancing dimension of time we shall find all patterns to be symmetrical and periodic. Now symmetrical and periodic function can

DAMRU - THE DYNAMIC RHYTHM



SPACE TIME SYMMETRY



SUPERIMPOSED VIBRATIONS
A JUMBLE OF RYTHMS

SUPERIMPOSED VIBRATIONS
A JUMBLE OF RYTHMS

Damru

The Damru of Siva represents the dynamic rhythm which produces the illusion of a universe. In the symmetry of space-time every pattern, every image ia a summation of superimposed vibrations. Fourier's theorem of higher mathematics shows that any symmetrical and periodic function of space-time is equivalent to an infinite series of terms each of which represents a vibration with a fixed frequency and a fixed amplitude.

be mathematically represented as a sum of an infinite number of vibrations. The following relationship holds under all circumstances:

$$F(t) = a_1 \sin (w_1 t) + a_2 \sin (w_2 t) + a_3 \sin (w_3 t) + \text{....to infinity.}$$

—Fourier's Theorem

Here 'F(t)' is any symmetrical and periodic function in space-time. Each expression on the right hand side of the equation represents a vibration with an amplitude 'a' and an angular frequency 'w'. There is an infinite number of such vibrations. The Fourier's theorem is universal. Any pattern of whatever shape or size, so long as it is symmetrical and periodic, is always the resultant of infinite number of vibrations superimposed upon one another. There is no exception to this rule. Hence the manifested cosmos which emerges out of void due to space-time limitation must also be a spectrum of superimposed vibrations, an infinite number of them, with a wide range of amplitudes and frequences. This is the spectrum of cosmic radiation which fills all space for all time.

SIVA AND SAKTI:

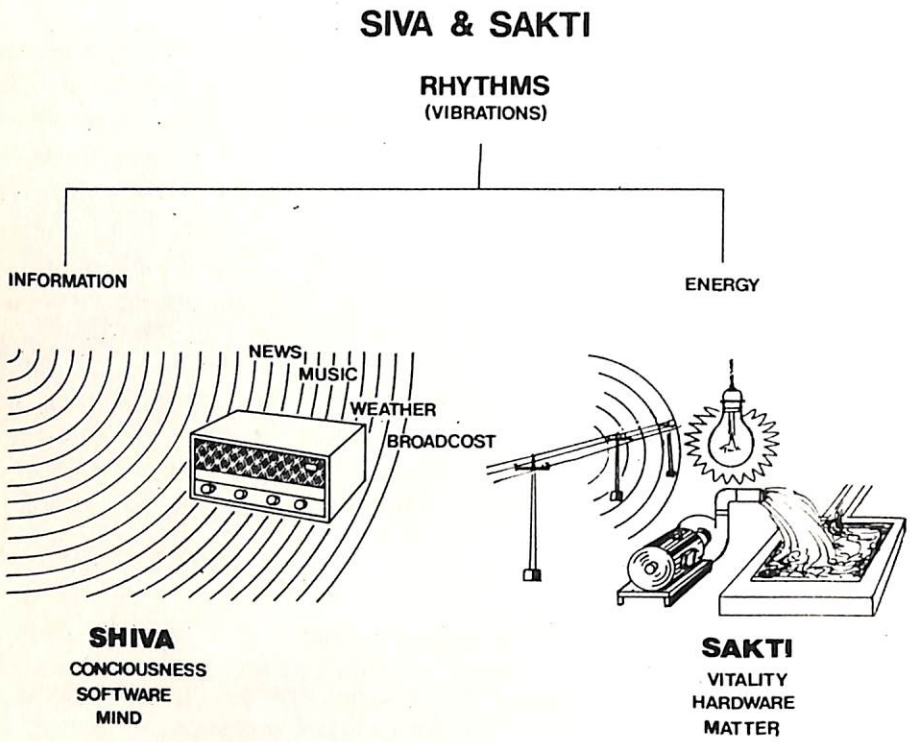
As a first step, we have seen that the entire universe of our perception is nothing but a sea of superimposed vibrations. Scientists and engineers who study vibrations and use them in modern technology, such as electricity or radio broadcasts, know that vibrations carry energy and information. Electrical energy is transported from place to place by electrical vibrations of 50-60 cycles per second at very high amplitudes (say 132,000 volts). These vibrations carry all the energy needed for our lights and fans and for the running of our industrial machines. But such vibrations do not carry much information. On the other hand, the vibrations used for radio broadcast carry a lot of information though very little energy. These vibrations are of very high frequency (300,000-- 10,000,000 cycles per second, that is 300 khz - 10 mhz). This is the standard broadcast band of radio waves. Such vibrations carry practically no energy and have very small amplitude (say a few microvolts). The information these vibrations carry is the radio programme of music and news that we can listen to in our radio receiver.

The important point to realise is that every vibration carries some amount of information and some amount of energy. When vibrations are mixed together to form complex patterns, the superimposed pattern always carries considerable energy and information.

The cosmos which manifests out of void under space-time limitation contains an infinite number of vibrations superimposed upon one another. It must, therefore, contain an infinite amount of information and an infinite amount of energy. The total information carried by the cosmos is known as Universal Consciousness, while the total amount of energy content is called Universal Power. In mythological terms Brahman is supposed to lay an egg known as Brahmand which is a product of two Deities Siva and Sakti. Siva represents universal consciousness while Sakti represents universal power. The hardware of this universe is the matter and energy which is derived from Sakti. The arrangement of matter and energy which defines the universe is the software derived from Siva. All intelligent life is a derivative of Siva which is the soul of the living being while the physical body is a constituent of Sakti. No life form can exist without a balanced combination of Siva and Sakti.

VIBRATION PATTERNS:

Vibrations, when superimposed upon one another, can form a variety of patterns and can accumulate a lot of energy by resonance. If we place some saw dust upon the diaphram of a drum and beat it lightly, we shall see the saw dust rearranges itself into beautiful patterns. Similarly if we mix sound vibrations in such a way that they resonate together, we can accumulate a lot of energy. Rhythmic sounds, such as those produced by a platoon of marching soldiers, can regenerate sufficient energy to collapse a bridge. Thus the landscape of colours and sounds that we see around us is actually a dynamic pattern of superimposed vibrations. All its beauty and all its energy is derived from vibrations combining together in different ways. Intelligent life, with the power to understand and memorize is also a process of interaction of vibrations. It is a process in which information is transferred from one vibration to another and stored as memory in the form of a complex vibration pattern. Let us examine these properties of vibrations more



Siva and Sakti

The rhythms of the manifested universe are vibrations like the ripples riding upon sea-waves. These vibrations contain information and energy. The information provides consciousness in a living brain while the energy provides the matter of which the brain is made and the vitality of the body to perform its functions.

closely and particularly to understand the formation of the material universe and the evolution of intelligent life in it.

Students of radio communication are familiar with the fact that vibrations, when superimposed upon one another, make two different kinds of patterns. These are:

1. Interference patterns and
2. Modulation patterns.

1. INTERFERENCE PATTERN: Interference of light waves is the most familiar example. If a drop of oil falls on water, we see on the surface coloured bands of light. These are interference fringes. Light vibrations of different colours are superimposing upon one another in such a way that they reinforce at some points in some colours while cancelling one another at other points and in other colours. In between there is a harmonious mix. The three areas of the pattern are described as (i) Nodal points, (ii) Anti-nodes and (iii) pure vibrations. The pattern is called interference fringes of light. The cosmic vibrations, similarly interfere with one another to produce an interference pattern. This also has three distinct colours or characteristics namely (i) inertia, (ii) mobility and (iii) harmony. Inertia is the result of accumulated energy at nodal points. Reinforced vibration can produce enough energy to behave as massive particles according to Einstein's famous equation of energy and mass equivalence:

$$E = mc^2$$

The nodal points behave as fundamental particles while the anti-nodes describe the free space beween the particles or the mean free path in which they move. The harmonious mix of pure vibrations represent the cosmic radiation which fills the total space. Thus our entire universe consists of fundamental particles, their arrangement and mobility in space defining the configuration of different atoms and molecules, and the radiation of solar and cosmic energy which fills the rest of the space. This is the scientific view of the universe.

In mythological terms the entire Prakriti, that is, the perceptible nature of this universe consists only of three attributes: TAMAS,

RAJAS and SATTVA. Tamas represents inertia or mass, that is, the material part of the universe, Rajas represents the movement or the energy part of the universe while Sattva represents a balance between Tamas and Rajas. Sattva is a pure vibration and represents purity of individual vibrations. The three attributies, mixed in different proportions, constitute all the objects of our environment as well as all our reactions to the environment. The subjective as well as the objective side of the universe is built up by these three attributes Tamas, Rajas and Sattva. Thus the mythological view is not different from the scientific view.

2. **MODULATION PATTERN:** When vibrations ride over one another, the information contained in one vibration is carried by another as its in-built intelligence. The carrier vibration is then said to be modulated by the signal content of the riding vibration. Radio broadcast is a simple example of modulated vibrations. When we tune our radio receiver to a particular station, say the local station in the medium wave band, we pick up a specific carrier vibration which has the assigned frequency of the station. For example Delhi - A station works on 819 kilohertz, that is, a vibration of frequency 819,000 cycles per seccond. Similarly BBC has several assigned frequencies in the short wave band. Each frequency represents a particular carrier vibration whch is permanently assigned to the station. It is the identity of the station in the radio frequency spectrum. Our radio identifies a particular station only by the fixed frequency assigned to the station. So carrier vibration is a fixed entity which is permanent and gives an identity to an individual station irrespective of the programme it carries.

Now riding over the fixed carrier vibrations is the music or voice being broadcast by the station. This is the signal or the intelligence which is carried by the carrier vibration as the modulation. There are many methods of modulation. The amplitude of the carrier vibration may be made to change according to the pattern of the signal vibration or the frequency may change. In one case it is called Amplitude Modulation (AM); in the other case it is Frequency Modulation (FM). We are already familiar with the AM and FM bands in our radio receiver. Once the receiver is tuned to a certain station, it is then able to recover the

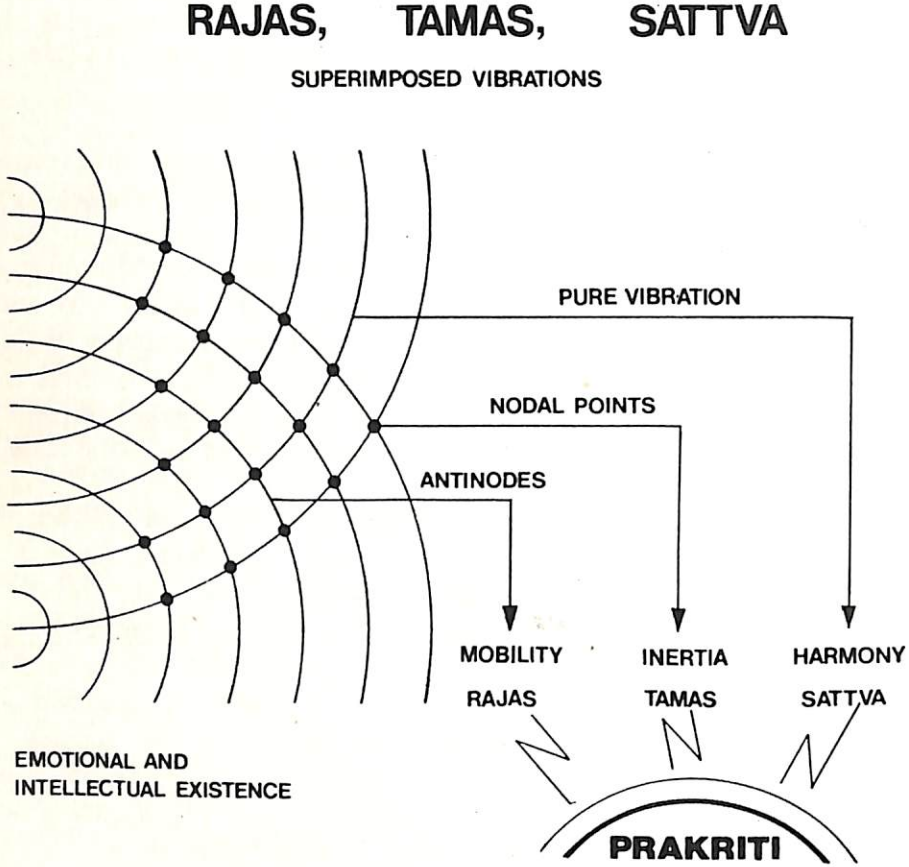
modulation pattern and reproduce it in the shape of voice or music. This recovery and reproduction is the main function of the receiver. It is called demodulation. Only after demodulation can we hear the music and enjoy it.

Thus a modulated vibration is a carrier of intelligence. It consists of a pure vibration which starts fluctuating in its amplitude or frequency in a way that the fluctuations define the signal or the intelligent message it carries. We can notice three characteristics in a modulated vibration: (i) the carrier, (ii) the signal or intelligence and (iii) the process of demodulation which enables the recovery of the signal. The cosmic vibrations, when modulated become the soul of intelligent living beings. The carrier is the Atma, the signal is the mind while the process of demodulation is the experience of the living being.

In mythological terms a living creature is defined as a product of three characteristics (i) SAT (i) CHIT and (iii) ANANDA. Sat is the purity of the soul and refers to the Atma of the living being. It is the pure carrier vibration without any modulation. Chit is the memory and knowledge acquired by the living being and which rides over the Atma as a modulation. With this load of modulations (known as Samskaras) the Atma becomes a Jivatma. Ananda is the enjoyment which the living being experiences when recovering signal patterns from the Atma. The physical body with a brain and sense organs act as the radio receiver and demodulates the carrier vibration to recover the memories and intelligence. It also enables the mind to react upon the same. Complete with the physical body, the living being is called a Jiva.

THE IDENTITY OF SELF:

As human beings we tend to identify ourselves with our body. This is a mistake since our body is something which we can observe and control. Who is it that observes and controls? Who am I? This is a difficult question to answer. All the entities which I associate with myself, such as my name, my thoughts or my feelings are, in fact, transitory entities which are not permanent. For the identity of the Self I should seek something more permanent, someone who provides a fixed backgound against which I observe the changing scene around me. In mythological terms it is the Atma which is the permanent identity of



Rajas, Tamas, Sattva

Superimposed vibrations produce (i) Nodes - points of concentrated energy which behave like inertial particles, (ii) anti-nodes - areas of low energy which define the free spaces in which the particles move and (iii) free vibrations which do not mix but survive harmoniously. The three patterns (Tamas, Rajas and Sattva) are the three Gunas of Prakriti. These three attributes define the entire material, emotional and intellectual existence of our perception.

the living being. The mind and the personality are temporary impressions upon the Atma. The sensations, the feelings and emotions are transitory reactions of the mind. The physical body is still more temporary, just providing one phase of the chain of interactions. To consider these temporary entities as an identity of the Self is a serious mistake, a case of gross ignorance.

Patanjali defines Avidya as follows:

अनित्याशुचिदुः खानात्मसु
नित्यशुचिसुखात्मख्यातिरविद्या ।

Anityasuci-duhkhanatmasu
nitya-suci-sukhatmakhyatir avidya

Yoga-Sutra II-5

(Ignorance is taking that which is non-eternal, impure, painful and non-self, for the eternal, pure and happy Atma, that is Self).

Let us now consider this definition of Avidya on the basis of the theory of vibrations. Taking the analogy of radio waves once again, let us see how we identify a station we have tuned on our radio receiver. The correct identity of the station, as we have seen, is the carrier frequency or the wave length which we should read on the dial. But we do not do so. In fact, we rarely know or try to find out the frequency in order to tune to a station. We merely search for some music and then say, "Yes, this is Vividh Bharati", and believe that we are now tuned to a particular station. This is a mistake, for the same programme might be getting relayed by another radio station. We make exactly the same mistake when we try to identify our Self on the basis of external entities.

In the case of radio, the fixed frequency assigned to a station is a permanent and pure vibration. In the case of a living being, it is the Atma which is eternal and pure. The radio programme which is being broadcast modulates the fixed carrier vibration and makes it impure. Similarly the Samskaras riding upon the Atma make it impure. The radio broadcast may be accompanied with pleasure or pain but the carrier vibration remains undisturbed and free to take yet another programme. In the same way the Atma is pure and eternal. It is the

Samskaras riding upon it which produce the reactions of pain and pleasure in our interaction with this manifested world.

Sankara has said:

"Identification of the Self with the aggregate of the body etc., is Avidya or Ignorance. It is only because of ignorance that the Self appears to be finite. When ignorance is destroyed, the Self which does not admit of any multiplicity whatsoever, truly reveals itself by itself, like the sun, when the cloud is removed."

"Thus through ignorance arises in Atma the delusion of body, which again, through Self- realisation, disappears in the Supreme Atma. All beings are by nature pure consciousness Itself; it is due to ignorance that they appear to be different from it. The world which is full of attachments, aversions and the like, is like a dream. It appears to be real so long as one is ignorant. With the dawning of knowledge, the world becomes unreal."

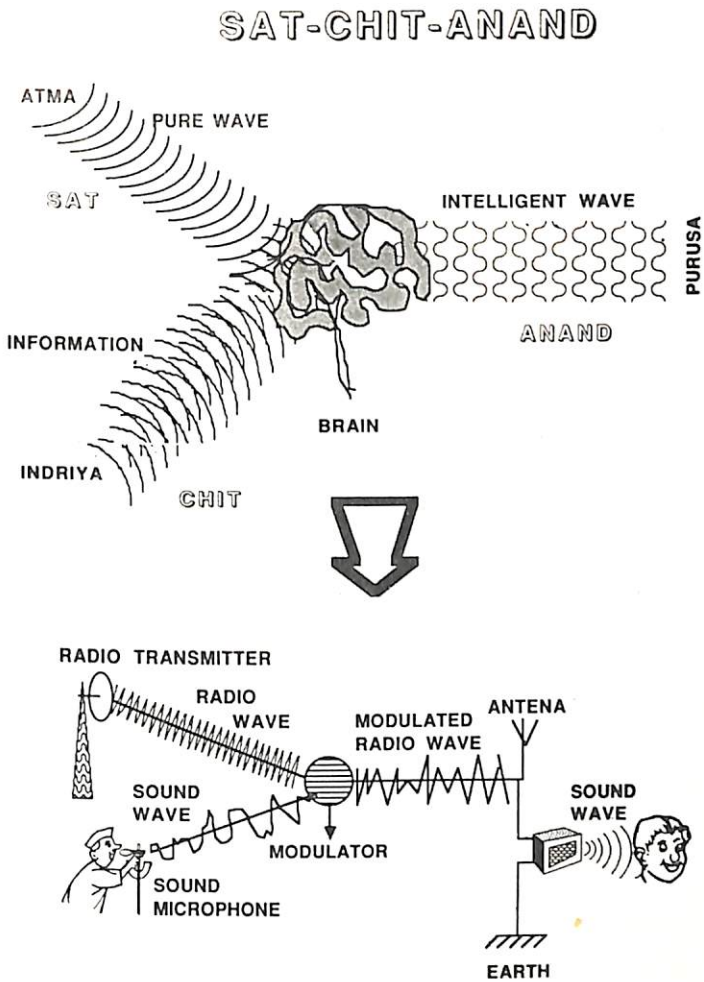
— *Sankara*

THE THREE STAGES OF AVIDYA:

We can now see that Avidya is the root cause of all perception. It is the field in which the identity of the Self takes place. The process of establishing a Self in the total spectrum of vibrations is, in itself a limitation or another stage of Avidya. Then the process of experiencing the world on the basis of Samskaras accumulated by the Atma is a further stage of Avidya. Finally the appreciation of the world around as on the bases of the limited sensory inputs is the final limitation or the third stage of Avidya.

We can define three stages of Avidya or three main limitations which together manifest the universe and give us an experience of our environment. These are:

STAGE I : Limitation of space-time: Under the limitation we disturb



Sat -- chit -- ananda

When vibrations ride over one another like ripples on seawaves, the information contained in one becomes the intelligence of the other. It is like a radio wave which, although a pure electromagnetic wave, carries speech and music as its intelligence. In the cosmic spectrum the intelligent vibrations are the Purusas which carry the information of Prakriti as their Samskaras and memory. The pure carrier vibration is SAT, the information and the impression of memory it carries are CHIT while the process of transfer and processing of information provides an experience known as ANANDA.

the balance of void and manifest, out of nothing, a spectrum of vibrations with an infinite number of patterns contained in them.

STAGE II: Limitation of frequency band: Under this limitation we select an arbitrary frequency band from the total spectrum and give it the identity of a Self. This band then pays a subjective role and starts appraising the rest of the spectrum as its object of appreciation and enjoyment.

STAGE III: Limitation of sense organs: Under this limitation we select specific vibrations from the total spectrum through our sense organs and try to build a picture of the universe around us on the limited information contained in these vibrations. We then react upon the environment on the basis of the limited information contained in the band width of the Self by comparing the signals with the limited input from our sense organs.

In mythological terms the first stage of Avidya produces a Brahmand out of Brahman. In other words Saguna Brahman manifests out of the ever-unmanifest Nirguna Brahman. In the second stage a multitude of Atmas are established which start interacting with one another and with their environments to accumulate Samskaras and perform Karmas through a temporary physical body.

In the third stage the physical body, with the help of its sense organs, starts experiencing pleasures and pains. With the memory stored in the Atma, the sense organs produce an illusion of a physical universe around itself. This illusion of continuous events produces the story of our life and keeps the Atma bound in the cycle of birth and death.

How this illusion arises and how the Atma experiences pleasures and pains purely on the basis of interaction of vibrations is the subject covered under the general title of MAYA. We shall discuss it in the next chapter.

CHAPTER III

THE CONCEPT OF MAYA

THE SHINING MOON:

"The moon does not shine if there is nobody to observe it"

Absurd! But true, for we cannot prove otherwise.

Let us examine the validity of the above statement. There are only three ways in which we can establish the existence of the shining moon. These are:

CASE I - DIRECT PERCEPTION: In this case an observer actually sees the moon shining. What happens is that the rays of moonshine enter the eyes of the observer and form an image on the retina. The nerve cells of the retina get stimulated and send a unique pattern of nerve impulses to the brain through the optic nerve. In the brain the impulses produce a unique pattern of vibrations. The brain recalls memories which are also in the form of similar vibration patterns and starts matching the patterns. An old memory fits with the image. The observer recalls his mother pointing to the moon and saying. "Look, that is the moon. Where is moon? There!" The observer now identifies the moon and reports the existence of the shining moon.

CASE II - INFERENCE OR ESTIMATION: in this case nobody actually observes the moon but a knowledgeable person recalls the memory of his previous knowledge and experience and says something like this: "Full moon is on Saturday. Today is Wednesday. It is only an inference or estimation. But it gives sufficient confidence to the person to report the existence of a shining moon.

CASE III - EVIDENCE or TESTIMONY: In this case we go by the testimony of others. A child comes running to mother and says, "Look

Mummy, the moon is shining outside." The statement produces the same reaction in the mind. Old memories are recalled and the identity of the moon is established. There is no reason to disbelieve the child and hence we report the existence of a shining moon.

What is the common factor in the three cases described above?

All the cases require the presence of a person with a mind and the memory of moon. If there is no such person there is no way to establish the existence of the shining moon. Further if the person observing the moon does not have any previous memory of the moon;if he had never seen or known the moon at all there would again be no way to establish that the moon actually shines.

The point to note in the arguments given above is that the material objects we see around us appear to be so only as a result of the reaction of our mind. They do not have any independent objective existence of their own without the presence of a mind to react to them. The observer has to be there and cannot simply be divorced from the object of observation. In reality the object exists only because of the observer and for the sake of the observer. The fact that others also see the moon and confirm its existence to the observer does not still establish the moon's existence independent of the mind. The repeated testimony of various people only reinforces the reaction in the mind, but does not take away the need of a mind to react.

Further the shape and colour of the moon that we observe is only what we have in our mind as a memory and has nothing to do with the rays of the moonshine that enter the eye. For example if a child is told, right from the beginning, that the moon is red and its name is Mars, he will point to the moon and say quite honestly that the red Mars is in the sky. The moonshine which stimulates the eyes is only a radiation of vibrations. The shape and colour we attribute to the moon is built up by the retina of the eye. Similarly the name we give to the moon is only what we have stored in our memory. It has nothing to do with the moonshine which stimulates the eye. The total picture is built only inside the brain. It is built by the impression already existing in the

memory and not so much by the source of stimulation. It is an illusion; a fiction of our imagination.

THE GREAT ILLUSION:

The mythological term MAYA means illusion. According to mythology the environment we perceive around us has no real substance; it is an illusion; a fiction of our imagination. Our ancient seers had realised, long long ago, the illusory nature of this universe. Buddha says:

> "The world has no substance of its own. It is simply a vast concordance of causes and conditions that have had their origin, solely and exclusively, in the activities of the mind that has been stimulated by ignorance, false imagination, desires and infatuation. It is not something external about which the mind has false conceptions; it has no substance whatsoever. It has come into appearance by the process of the mind itself; manifesting its own delusions. It is founded and built up out of the desires of the mind, out of its sufferings and struggles incidental to the pain caused by its own greed, anger and foolishness. Men who seek the way to enlightenment should be ready to fight such a mind to attain their goal.
>
> - The way of Practical attainment
> *"The Teachings of Buddha"*

THE SCIENTIFIC VIEW:

The mythological view of the illusory nature of this universe is in conflict with the scientific view. In the scientific view which is based on our day to day observations, the objects of nature exist 'out there' independent of the observer. These objects, such as the sun and the moon, or the elements on the surface of earth, solids, liquids and gases, have been studied, for centuries, by learned scientists and have been found to obey basic scientific laws without any contradiction and independent of the scientists who performed the experiments. There

can, thus, be no question about the existence of the moon, whether there is an observer or no observer.

Which view is correct? Scientific or mythological?

Let us examine the scientific view in some more detail. The most convincing evidence of the existence of anything is by looking at it, that is, by the process of sight. I see in my study (where I am writing this script) a number of books of different colours in the shelf. There is a desk in front of me with a glass sheet. There are a few chairs, a painting on the wall and a clock. Two persons are working in a corner. The scenary is quite natural and I see it everyday. Is this scenary real or a fiction of my imagination? I take a colour photograph of my room. The photograph shows the desk, the book, the persons and the painting quite clearly. It was taken by a camera and not by my mind. Still it has all the colours and gives a vivid three-dimensional effect.

Next let me change the film and load another film in the camera which is sensitive only to infra-red light. Again I get a photograph of which the details are somewhat vague. The outline of the furniture is hazy, the painting is blank, while the colours of the books are only shades of black and white. Next I load a film used for X-ray and take yet another photograph of the room. This time the photograph is quite different and cannot be recognised. Most of the furniture is missing while the metal items show clearly. The two perons working look like skeletons with a hazy outline.

What has changed in the three photographs? Which one shows the reality? We see with our eyes only the visible light which has seven colours. In the spectrum of electro-magnetic vibrations visible light occupies a narrow band of frequencies in the range of one million GHZ. Infra-red is another frequency of around 10,000 GHZ to which our eyes are not sensitive. X-rays are also electro-magnetic vibrations with a much higher frequency which penetrate through skin without forming a shadow. All the three photographs show the real shape of objects in the room but in different lights. To us only the visible light emitted by objects appears real, the rest is imagination. But the spectrum of electro-magnetic vibrations is infinite. What we consider as real and solid object, 'out there',is nothing but a limited case of mental perception through the limited range of our eyes.

The same is true of our sense of hearing. The world of sounds, as it appears to us, is bursting with information and knowledge. There are hundreds of different languages, music of different countries, classical and modern pop-music, and in addition, there are the sounds of birds and animals, noise of the street and thunder of the flying jet. But if we look at the sounds as vibrations, we find that all the voices and music, all the noise and information, are produced by a very limited range of vibrations, vibrations in the frequency range of 30 hz to about 10,000 Hz. Our ears are sensitive only to this small range of vibrations; the sub-sonic and the super-sonic ranges lying on either side have no effect on our ears, and we remain ignorant of all the audio-activity outside this limited range. We remain absorbed in the sonic range of sounds and call it the vast world of the audible spectrum.

We can argue similarly about the limitation of other sense organs of our body on the basis of which we perceive this environment. The scientific instruments extend the range of our perception to some extent. But even the range of instruments is finite and very small compared to the infinite spectrum of vibrations which extend on either side of our perception. Our intellect and memory, which are based upon the information furnished to us by our sense organs, is similarly limited in its scope; there is a vast sea of information which lies beyond the limit of our comprehension. Take for example, our sense of time. The measure of one second adopted by our body is just an arbitrary duration of time which fits the range of our body functions, such as our heart-beat. We can easily visualise the duration of a few minutes or hours or even a few months or years. But if we talk of a million years, it is just too long to comprehend. The earth may have been born a few billion years ago and may last for another few billion years, we could not care less; the duration is just outside our range of comprehension. Similarly there are innumerable activities taking place in the time frame of, say, a billionth of a second. We can hardly comprehend this period though we make use of such short durations in computer programming.

The point to realize here is that reality is not just what we perceive on this earth through our sense organs or through scientific instruments. It is not even what we can comprehend by stretching our intellect. It is far more than that. We are just having a microscopic glimpse of total reality. A century ago Swami Vivekananda said in his lecture tour to America:

"This universe of ours, the universe of the sense, the rational, the intellectual, is bounded on both sides by the illimitable, the unknowable, the ever unknown".

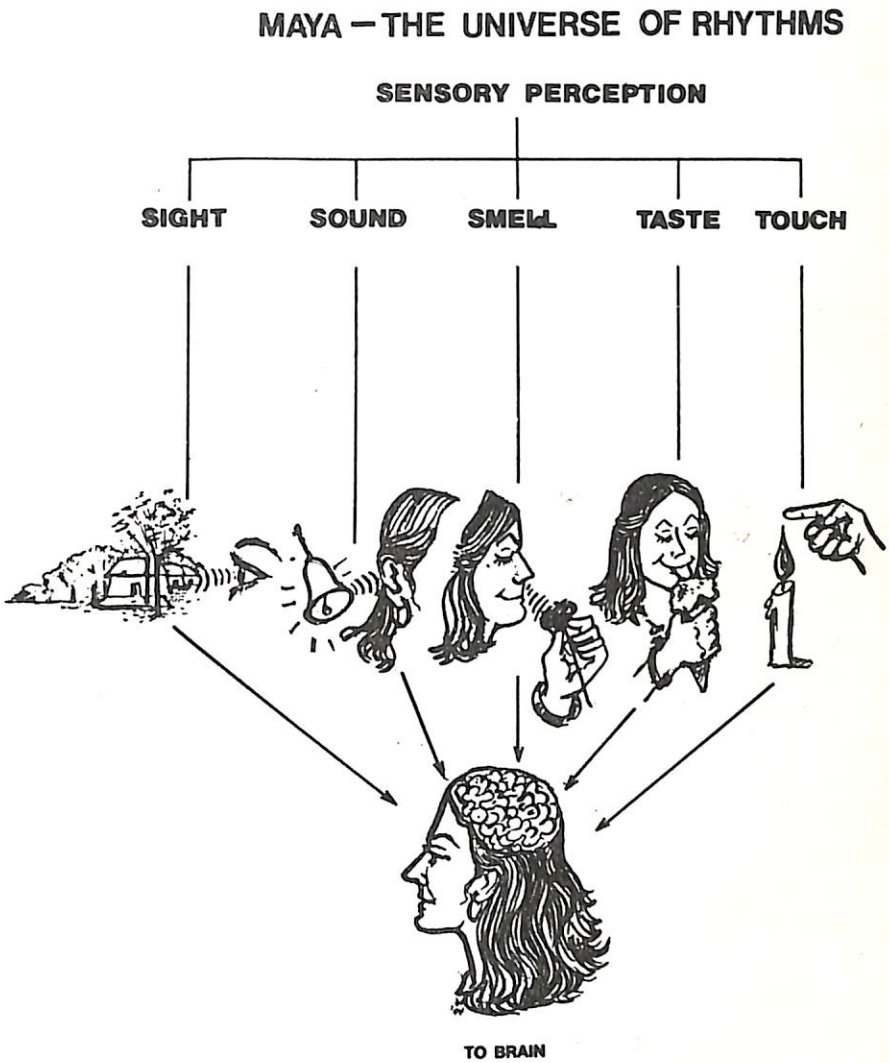
–Swami Vivekananda

The reality is, therefore, something much larger than what we perceive. What we perceive is just a tiny fraction of it selected by our sense organs and our brain. The world of our perception is what the brain presents to us. It is our sense-perception, our emotions and our intellectual concepts which constitute the perceptible universe. It is a fiction of our imagination.

THE BRAIN CELLS:

"We shall attempt to study" the illusory nature of this universe from another point of view. Look at the mechnism of the brain through which we perceive and understand everything. The brain consists of a large number of nerve cells or neurons, as they are called. There are about 12 billion neurons in the brain which are spread out in a layers called the cereberal cortex. Each neuron is a complete cell with a head and a tail. The head picks up stimulation and produces a series of electro-chemical impulses which travel along the length of the nerve upto the tail which is called **axon**. If the tail of a cell comes in contact with the head of another cell, the nerve impulses stimulate the next cell as well, and the impulses proceed further. It is the same kind of nerve cells which connect the various limbs of our body to the brain through the spinal cord. The nerve cells spread out in the body have long tails, a few centimeters long, while those inside the ceraberal cortex of the brain are very short, a thousandth of a millimeter or so. But the function of all the nerve cells or neurons of brain is the same: they receive stimulation at the head and transmit impulses towards the tail; the stronger the stimulation, the higher the frequency of nerve impulses.

Now let us see what happens in the brain when we observe something or hear a voice. The nerve cells of the eye or the ear get stimulated by the light or the sound falling on them. The eye or the ear then sends nerve impulses to the brain. The impulses reaching the



Maya

Our perception of this universe is made up only of a jumble of rhythms which the brain receives from the sense organs: eyes, ears, nose, tongue and skin; nothing else! The rhythmic patterns produced in the brain by the sense organs join together to form images of colours, voices etc. The images are only in the brain. Outside, there are only vibrations affecting and stimulating the sense organs. The objects of colours and sounds, tastes and smells, temperatures and pressures, are only products of the brain with no reality of their own. They are an illusion: Maya.

brain spread out into the billions of neurons and form circulating currents. The unique pattern of the circulating currents formed in the brain is then memorized for future reference. If a similar pattern already exists in the memory, the vibration patterns match and a regeneration of energy takes place. The stored memory is recalled. The brain now identifies the received impulse pattern with the earlier memory and we start seeing a known object or hearing a known voice.

Now the point to note in this process is that the brain identifies only the vibration patterns formed by nerve impulses. It does not receive directly the light or the sound which created the patterns. In fact, if we could artificially produce the same patterns in the brain, the brain has no way to distinguish the difference. We would then believe that we were actually seeing or hearing something we knew. This is what happens when we dream or when somebody is hypnotized. The brain recognizes all objects only as vibration patterns. All our memory is also in the form of vibration patterns. When we identify an object from our previous memory the brain is only comparing and matching vibration patterns. There are no objects 'out there' as far as the brain is concerned. The objects and the colours and sounds that we believe exist around us are only names we have given to specific vibration patterns of nerve impulses and which we recall as our memory. There are no real objects or sounds actually existing outside of our brain. There are only stimulating disturbances which affect our sense organs and produce impulse patterns. The stimulating disturbances are also vibrations, sound waves or light waves. There are no real solid objects; it is only our brain's interpretation of the received impulse patterns.

If we analyse the activity of the brain in terms of its occupancy in analysing the sensory impulses and those generated internally in the brain, we shall find that the duration in which it is engaged in sensory perception is extremely small - say a few minutes in the entire 24-hour day. The rest of the time the brain is processing internally generated impulses: feelings, emotions, thoughts, reasoning and decision making. For this major activity of the brain the world 'out there' may or may not exist. The brain will continue to be active as before. In fact, the brain of a blind or deaf person is as active as that of a normal person with eyes and ears. The universe that we define in terms of what we see or hear is; at best, a very small addition to the total perception of the brain; the major portion is our own imagination.

THE REALITY:

Thus we see that the scientific view is no different from the mythological view. Here also we come to the inescapable conclusion that the objects around us exist only in our mind. They are formed by unique combinations of our old memories stimulated by our sense organs. The brain does the function of associating memories with sensory inputs and produces an illusion of objects and colours and sounds existing around us. Remove the brain, remove the memory and the whole universe will collapse. It will vanish altogether. It is an illusion, a creation of our own mind. This is the concept of 'Maya'.

The reality is always void. Limited in space and time it manifests as spectrum of superimposed vibrations. Limited further in frequency band it projects images and stores information as memory. Limited still further by our sense organs the selected vibration patterns give us the illusion of a universe around us and draw the continuous story of our life in the dimension of time. The whole phenomenon is illusory which has no foundation at all. It is projected by the series of limitations as described above. We have studied these limitations earlier under the general title of Avidya. How vibrations produce solid objects and how a limited band of vibrations acquire a capacity of storing memory and acting as a subjective observer is the mystery of PURUSA and PRAKRITI. This we shall study in the next chapter.

CHAPTER IV

PURUSA AND PRAKRITI

We have seen that the manifested universe around us is an illusion, a fiction of our imagination created by our own senses, emotions and intellect. It has no reality outside our brain and has manifested only as a result of our ignorance or Avidya. In scientific terms the solid objects and colours we see around us are only patterns of superimposed vibrations which appear to us as objects due to our previous memory and experiences. The memories and experiences are also vibration patterns stored in a certain band which we identify as our self. The whole phenomenon is an interaction of vibrations and has no objective reality. The vibrations themselves have manifested from void under the space-time limitation. The only reality is Void or Brahman.

INTELLIGENT VIBRATIONS:

Let us now examine, in some detail, how these superimposed vibrations become solid objects in one case and behave as living creatures with a memory and intellect in the other. We shall also see how the interaction of two sets of vibrations sets up a subject-object relationship under which the living being starts perceiving its surroundings and enjoys life in their midst.

The scientific theory of intelligent vibrations is somewhat involved. I shall try to touch only upon the fundamental principles. For students of wave-mechanics and communications, these principles will be simple. The others may skip this part altogether or try to take the results for granted as I shall be using them in subsequent discussions.

We have seen in chapter II, vibrations, when superimposed upon one another, make two kinds of patterns: (i) Interference patterns and (ii) Modulation patterns. Interference patterns are the result of simple summation of vibrations. In these patterns the amplitudes are merely

added according to the phase in which the vibrations meet. The resultant pattern contains areas of concentrated energy, areas of high mobility and areas of free vibrations. In terms of attributes these different areas show the qualities of inertia, mobility and harmony. (Tamas, Rajas and Sattva- in mythological terms). Statistically the three attributes behave as fundamental particles, their movement in bound patterns and the radiation filling the space in between. The material universe of science is made up only of these three attributes. We shall discuss these attributes subsequently in this chapter.

The modulation patterns are somewhat more complicated. These are formed by multiplication of vibrations. Multiplication, which results in modulation, takes place when vibrations pass through non-linear elements which allow energy to flow in one direction but stop its flow in the other direction. Radiowaves are modulated by non-linear conductors such as diodes or transistors. The brain cells which allow nerve impulses to flow in one direction (from dendrites to axons) but not in the other direction, act as modulaters for mental vibrations. It is the modulated vibrations which carry intelligence and behave as intelligent vibrations.

When vibrations multiply they produce inter-modulation products which are also vibrations but of different frequencies. Suppose two vibrations of amplitudes 'A' and 'a' and frequencies 'F' and 'f' respectively multiply. Then we have the trigonometrical equation:

$$A \sin 2\Pi Ft \times a \sin 2\Pi ft = Aa/2 \cos 2\Pi (F-f)\, t - Aa/2 \cos 2\Pi (F+f)t$$

The trigonometrical functions 'sin' and 'cos' represent simple harmonic motion which is the same thing as a vibration. 't' represents the dimension of time. Π (Pi) = 3.14

The left hand side of the equation shows the product of two vibrations. The right hand side shows two different vibrations of amplitudes 'Aa/2' and frequencies (F+f) and (F-f). Thus the equation shows that, as a result of multiplication, two new vibrations of frequencies (F+f) and (F-f) have been created. These vibrations are called intermodulation products. In actual practice when vibrations pass through non-linear elements we always have intermodulation products

formed. Now suppose the frequency 'F' is much higher than the frequency 'f'. The two new vibrations will then lie very close to the vibration of frequency 'F' on either side of it in the frequency spectrum. They will form a channel with a bandwidth of 2f located at the frequency 'F' in the spectrum. This channel now represents an intelligent vibration of frequency 'F' carrying a signal of frequency 'f'. This is what happens in a radio broadcast. The radio frequency 'F' is usually very high, say 800,000 hertz. The voice frequency which modulates it is very low, say 1000 hertz. The broadcast channel then carries an bandwidth of 2000 herts in the range of 799,000 to 801,000 hertz. This channel now carries an audio tone of 1000 hertz on a radio frequency of 800,000 hertz. If you tune your radio receiver to 800 Khz (800,000 Hertz) in the medium wave band, you will hear a whistling tone of 1000 hz.

THE CHANNEL OF PURUSA:

A very similar phenomenon takes place in the brain of a living creature. Vibrations of different frequencies pass through the nerve cells and the process of modulation takes place. In this case cosmic vibrations multiply and form intermodulation products. The modulated vibrations then acquire intelligence. In this case the Atma of a living creature is the high frequency vibration of the cosmic spectrum which gets modulated. The sensory impulses produced by the brain are of very low frequency and become the modulating signals. When these vibrations meet in the non-linear cells of the brain multiplication takes place and the Atma gets modulated by the patterns of sensory impulses. The Atma then acquires a bandwidth and forms a channel in the cosmic spectrum. This channel carries all the intermodulation products formed in the brain. The mythological term PURUSA I have associated with this channel. Purusa represents the location of an intelligent being in the cosmic spectrum. It is the identity of a living being and fixes its individuality amongst the millions of living creatures. The modulated vibration of the Atma is then called Jivatma. It is the soul of the living being. When equipped with a brain and sense organs, it becomes a Jiva or a fully developed living creature.

The mythological scriptures recognize a living being only by the

Jivatma. Jivatma or the soul is considered as a complete living entity with a mind and a memory. It has its own temperament and will. So long as it is not associated with a physical body it is not able to interact with physical environments and other living beings. With a brain and sense organs the process of modulation becomes possible and normal life begins. The physical body is a temporary superficial structure used only for the process of modulation and demodulation. It is given a secondary importance in mythology. Man is recognized by his soul and not by his body. The body will die after a life-span but the soul is eternal.

MEMORY AS A MODULATION UPON ATMA:

Our ancient wisdom is based upon the theory of Karma. We believe that our thoughts and actions accompany us even after death and confront us in our future life. This belief is based on the premise that the soul does not die but takes another birth in a different body. The soul is the Jivatma. It carries all the impressions which it has accumulated in its different births. These impressions are called Samskaras or Karmas. Samskaras are knowledge oriented impressions while Karmas are those which are action oriented. These are the memories stored in the vibration of the Atma. The memories of current life are also stored in the Atma as modulation along with the old Samakaras the Karmas. According to our ancient wisdom the memory is an integral part of the Jivatma and is not a deposit in the cortex of the brain as some scientists are trying to establish. The Sanskaras, Karmas and the current memories are one continuum of impressions carried by the Atma linked by cause and effect even though seperated by time, place or the class of the living being.

Patanjali has said:

जातिदेशकालव्यवहितानामप्यानन्तर्यं
स्मृतिसंस्कारयोरेकरूपत्वात् ।

Jati-desa-kala-vyvahitanamapy anantarryam
smrti-samskarayorekarupatvat

Yoga-Sūtra IV-9

(There is relationship of cause and effect even though seperated

by class, locality and time because memory and impressions are the same in form)

Once a vibration is modulated, the modulating pattern becomes a permanent feature of the vibration. It cannot be wiped out except by a fresh modulation of an opposite phase. A radio wave carrying a certain voice may travel in space for miles together, get reflected by moon and return to earth after a long time. But once it is received back it will still carry the same voice with all the details intact. Similarly the memories we collect during our lifetime become a permanent modulation upon the Atma and cannot be erased even if the brain is destroyed. After death they remain with the Jivatma and reappear as Samskaras and Karmas in a subsequent life of the same Jivatma,that is, when another living mechanism of a brain and sense organs tune to the same vibration of the Atma.

THE PROCESS OF DEMODULATION:

We have seen that when a vibration of frequency 'F'is modulated by another vibration of frequency 'f' intermodulation products of frequencies 'F+f' and 'F-f'are produced. In this case the vibration with frequency 'F' is called the carrier vibration. It carries the vibration of frequency 'f' as its intelligence or memory. How can we recall this memory or derive the vibration 'f' back from the intermodulation products 'F+f' and 'F-f'? The process of recovery is called demodulation. It is also a method of multiplication. Suppose we receive a vibration of frequency 'F+f', we can multiply it by another vibration of frequency 'F' by passing the two vibrations through a non-linear element. Again intermodulation products will be formed. One of the intermodulation products will be the vibration of frequency 'f' as shown by the following equation:

$$a \sin 2\Pi (F+f) t \times A \sin 2\Pi Ft = Aa/2 \cos 2\Pi (2F+f) t -- Aa/2 \cos 2\Pi ft$$

The last term of the equation given above is the vibration of frequency 'f' which we have recovered from the received vibration of frequency 'F+f'. So, for the purpose of demodulation, all that we have to do is to locally generate the frequency 'F' and mix it with the received frequency (F+f) in a non-linear element and then recover the frequency 'f' through a selective filter. This is exactly what is done in a radio receiver.

When we tune to a station of frequency 800 khz, the receiver generates the frequency of 800 khz and mixes it with the received signal in a transistor or diode (a non-linear element). The output is then passed through an audio frequency filter to recover the program of speech or music.

RECALLING OLD MEMORIES:

When we are awake and conscious, our brain is constantly generating high frequency vibrations in the range of the Atma. At each of these frequencies some information is already stored in the channel of the Purusa. This information is then recovered by the process of demodulation. It appears as a low frequency impulse pattern which reverberates in the cortex of the brain. The brain normally receives impulses from sense organs which reverberate in the cortex to produce images of sights and sounds. The signals recovered from the channel of Purusa also produce similar images of sights and sounds. These are our thoughts. The brain is constantly thinking. Even when we are asleep the brain is thinking. The thoughts appear as dreams. Only in deep sleep when the brain stops generating high frequency vibrations we have a dreamless sleep.

The process by which the brain tunes to different frequencies in the channel of the Purusa is automatic or subconscious. By effort and practice, however, we can direct the brain to a specific vibration and thus recall a specific memory. In general the brain keeps drifting within the channel of the Purusa thus surveying all the memories stored there. If the sense organs are also active and forming specific images in the brain, then the brain starts matching the patterns formed by the sensory inputs with those it derives from the channel of Purusa. As soon as a pattern matches the brain recalls all the information stored in the memory relating to the matched pattern. Suppose I see the face of my mother, in the first instance it is only an impression. Soon the image matches with a recent memory and I suddenly recognize my mother and I also recollect that she had asked me to go to the market which I have not done. So I get up and start explaining. Why? Because the brain was busy recalling all the other matching memories too and one of these memories contained the incident when mother was very angry last time I had failed to do her bidding.

The process of memory recall in the brain is different from that used in a computer. In a computer when a particular address of a stored memory is given, only that memory is recalled. In the brain, once a band is selected by tuning, all the memories recorded in that band of vibrations are recalled. The glimpse of a face may recall to memory, not only the name of the person but the complete information of our knowledge of the person. Similarly a single note of an old song we used to sing in our childhood may recall not only the entire song but also old memories of our childhood associated with the song.

The samskaras and Karmas are similar memories recorded in the Jivatma before the birth of the present body and brain. They are also recalled when the brain tunes to the specific bands in which they are stored. However,they cannot be identified as they do not form matching images with our sensory inputs. This is because of the vast difference in the time, place and the class of birth. The old impression simply do not make any sense in terms of our current experience. However, they guide us in our interaction with our environments and give us definite likes and dislikes. A person may enjoy life or feel constantly miserable. This is determined by his previous Samskaras. Similarly his actions may be guided by his old Karmas. In general, the temperament of a person is determined by the information stored in the channel of the Purusa, whether as a current memory or as old Samskaras and Karmas. The physical shape of the body is determind by the genes inherited from the parents; the mental attitudes are governed by our experiences of the past including those of past lives.

THE DOMAIN OF PRAKRITI:

The term Prakriti literally means mother nature or fundamental form of the perceptible universe. It is the universe that we perceive through our senses of sight, hearing, taste, smell and touch. The mythological meaning of Prakriti, however, extends much further and covers not only what we see, hear, taste, smell or touch but also what we feel and think about our perception. Our sensations of heat, cold, wet, dry, hard, soft etc., as also our emotions of passion, anger, greed, attachment or pride are part of Prakriti. Further our thoughts, inferences and reasoning are also part of Prakriti. The mythological

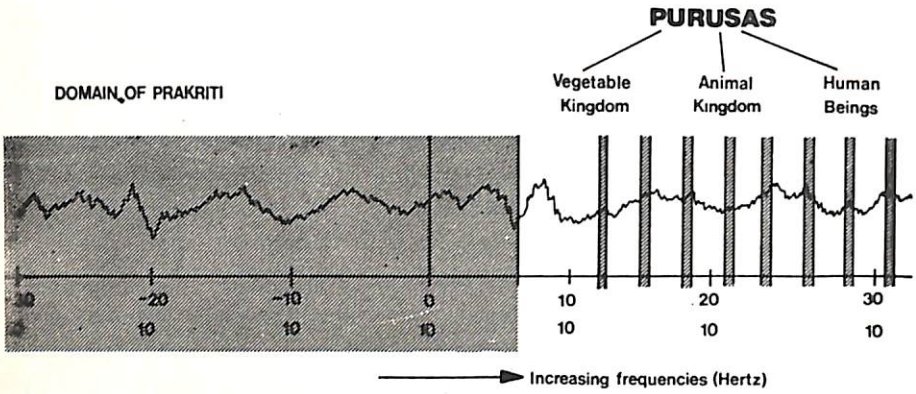
potential of Prakriti is thus infinite. However, in terms of vibrations.Prakriti is still a limited band. Just as the world of audible sounds contain an infinite number of voices, languages, melodies and noises, but actually covers only a small band of vibrations, Prakriti, though infinite in its attributes, is confined to a limited range of vibrations. This range is individual to each living being and depends upon the bandwidth of the Purusa to which the living being is associated. Let us examine the relationship between the bandwidth of the Purusa and the domain of Prakriti.

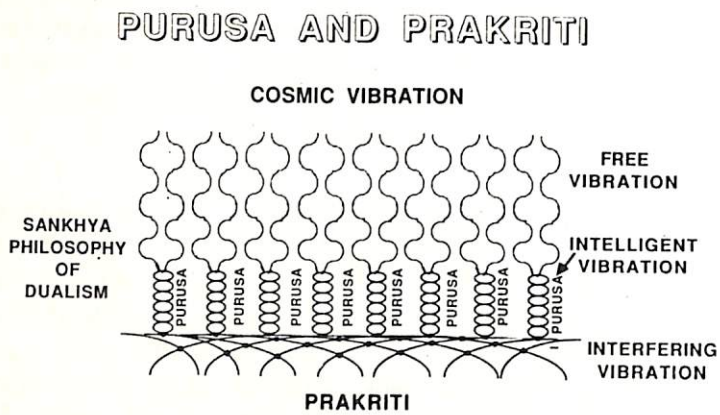
We have defined Purusa to represent a channel in the cosmic spectrum located at a frequency, say 'F' with a bandwidth, say '2f'. The channel extends from frequency 'F-f' to 'F+f'. When we demodulate this channel we shall recover all vibrations upto the frequency 'f' which are stored in this channel. Any living being associated with this Purusa can interact with vibrations in the range '0-f'. In other words the living being can perceive external environment as vibration patterns limited to the frequency range of '0' to 'f'. This is the domain of Prakriti for the living being. Another Purusa with a wider bandwidth will have a larger domain of Prakriti.

From the above analysis it will be clear that different Purusas representing individual living beings may be located at different frequencies say F1, F2, F3 etc., but if each one of them has approximately the same bandwidth of 2f, they will all perceive the same Prakriti of vibrations in the range of '0-f'. That is how all of us human beings see the same universe around us. There may be marginal differences in our depth of percetion, but, by and large we see the same objects with the same colours and shape. This is also because we all have the same type of sense organs. It is quite different in the case of animals. They may see a different universe, much smaller compared to what we human beings, perceive, for the bandwith of Purusas associated with animals may be quite small and also because the animals have different type of sense organs.

THE MECHANISM OF PERCEPTION:

Perception is nothing but interaction of vibrations in the brain. There are two sources from where vibrations enter the brain. When





Pursa and Prakriti

Cosmic vibrations set up under the space-time limitation interact with one another so that the information content adds together or multiplies. Addition leads to interference pattern with the three attributes of Prakriti. Multiplication leads to modulation patterns producing intelligent vibrations which become the Purusas. Purusas interact with Prakriti to form shapes - inanimate and animate - minerals, vegetables, animals and humans. If we classify vibrations by frequency, a Purusa is a channel of a fixed frequency, say 'F', with a fixed bandwidth, say 'f'. The domain of Prakriti then covers all the frequencies from '0' to 'f'. Every human being is associated with a specific Purusa. The bandwidth is variable and defines the depth of comprehension of the individual.

these vibrations meet they interact with one another and produce a sense of perception. The two sources are (i) sensory inputs and (ii) memory inputs. Sensory inputs are vibrations produced by impulses received from sense organs while memory inputs are vibrations which the brain derives from the channel of Purusa by demodulation. When the two sets of vibrations meet they produce one or more of the following reactions:

1. **Positive resonance:** When vibrations of the same frequency meet in the same phase, they reinforce one another. There is regeneration of energy. The brain experiences a sense of identification, a feeling of pleasure and happiness leading to a response of attraction to the object of perception.

2. **Negative resonance:** If the vibrations of the same frequency meet in opposite phases, they tend to cancel each other leading to attenuation of energy. The experience is one of pain and depression. There is loss of vitality and a feeling of aversion to the object of perception.

3. **Beat-effect:** When vibrations of nearly the same but unequal frequencies meet, they alternatively reinforce and cancel one another. The experience is one of pleasure followed by pain. The mind wavers between likes and dislikes. It is a state of indecision. The rate of fluctuation is proportional to the difference in the frequencies of the two vibrations which interact.

4. **Superimposition:** When vibrations of distinctly different frequencies meet one another, they do not interact directly but, due to the non-linear nerve cells of the brain, the lower frequency vibration modulates the higher frequency one and becomes an associated memory. Thus the perceptible image of one object becomes the associated memory of another object or event. The brain keeps building such associations between objects and events which we use as our knowledge or experience for future reference.

TAMAS, RAJAS AND SATTVA:

When Purusa and Prakriti interact, the vibrations of sensory and

memory inputs superimpose to produce interference patterns. As we have seen the attributes of interference patterns are inertia, mobility and harmony or Tamas, Rajas and Sattva. The Prakriti that we perceive, therefore consists only of three attributes namely Tamas, Rajas and Sattva. In mythological terms the three attributes are called the three **'GUNAS'** of Prakriti. All objects of nature, whether material or conceptual, are combinations of Tamas, Rajas and Sattva; Tamas for the dark or heavy part, Rajas for the light or active part and Sattva for the pure and balanced part. The Bhagvad Gita classifies all entities such as knowledge, action, reason, firmness or action always into these three catagories. (See Bhagvad Gita discourse 18, verses 19-39).

Thus we have seen that the Purusa and Prakriti of our ancient mythology are nothing but vibration patterns which form in the infinite spectrum of vibrations emerging from void due to the space-time limitation of our perception. Purusas are points of concentrated information which arise in Prakriti due to non-linear interaction of vibrations. These Purusas take various life-forms and enjoy the Prakriti of their perception. The bandwidth of Purusa determines the domain of Prakriti that the living being can enjoy. Theoritically the entire cosmic spectrum is the domain of Prakriti. A Purusa may arise anywhere in Prakriti and acquire any bandwidth. Life then starts. Once life is formed the domain of perception of the living being is determined by the bandwidth of he Purusa; the larger the bandwidth, the wider the range of perception. The information transfer now takes place from one part of the spectrum into another filling the channel of Purusa with Samskaras and Karmas. The process is continuous and eternal. There is no beginning or end; not is there the need of any guiding deity or God. This is the essence of Samkhya philosophy of our mythology.

SAMKHYA PHILOSOPHY

According to Samkhya philosophy there are an infinite number of Purusas, independent of one another, who interact with the common domain of Prakriti. They emerge from Prakriti and remerge into it. The cycle is perpetual and enternal. There is no beginning and end to it. In Samkhya philosophy there is no concept of God as a common entity amongst Purusas. The Vedantic philosophy of Hindu religion, however, recognizes a single God who embodies all Purusas as well as

the Prakriti. Each Purusa is an image of God in one of His aspects. God is a special Purusa who is free from any distorsions or modulation upon the sould. Patanjali describes God as a particular soul:

क्लेशकर्मविपाकाशयरैपरामृष्टः पुरुषविशेष इश्वरः ।

"Kleśa-karma-vipākāśayair apāramrśṭaḥ puruśa-viṣeṣa Īśvaraḥ"

Yoga-Sūtra I-24

(Isvara is a particular soul untouched by affliction, works, fruition and impressions).

According to this definition God is a Purusa with infinite bandwidth or it could be a pure vibration with zero bandwidth which is not fixed but can scan the entire spectrum. The second definition enables man to approach God by purifying his own Atma.

The Vedantic philosophy goes one step further and describes God as the Saguna form of Brahman who emerges from the Nirguna Brahman. The ultimate reality is Brahman or void.

Now if we compare the philosophical entities with the vibration patterns discussed above the picture become surprisingly clear and the "obscurity" in the religious beliefs gives way to enlightened revelation. As a first step the spectrum of vibrations emerges from void due to space-time limitation. We can regard this spectrum as God or Isvara as it contains all Purusas as well as the Prakriti. In fact all that we can perceive and understand is already contained in the spectrum. In the second step we limit the spectrum to one selected frequency and call it Purusa. The modulated information contained on this frequency then becomes the mind and memory of this Purusa. In the third step we demodulate the information and compare it with the selected vibrations picked up by the sense organs to provide the Purusa an experience of Prakriti. This is the principle of intelligent life. If we confine our attention to the infinite number of Purusas looking at the Prakriti, the picture is self-contained and there is no need of a God. That is Samkhya philosophy. However if we take into account the entire spectrum of vibrations we see a unity and purpose in the individual

activities and we have a concept of God. That is Vedanta. Now if we ponder over the manifestation of the spectrum from void due to space-time limitation, we have a glimpse of the ultimate reality, Brahman. These are the three stages of Avidya which set up this universe for the experience of the living beings. If we shed Avidya the entire perception will vanish. There is no reality behind it. It is illusion. The reality is always void.

CHAPTER V

PLANES OF CONSCIOUSNESS

In the previous chapter I have described how intelligent life results from the interaction of Purusas with Prakriti. A Purusa is any selected channel of vibrations placed at an arbitrary point in the frequency spectrum. Once located and a bandwidth assigned to this channel, the domain of Prakriti is determined by the highest frequency which can be accomodated in this channel. Every living being occupies one such channel and hence is associated with one specific Purusa. I occupy one channel; I am one Purusa; you occupy another; you are another Purusa. These channels of Purusas are located at different points of the frequency spectrum and are distinguished from one another by the central frequency of the channel. This is the frequency of the Atmic vibration. My Atma may function at a frequency 'F1'; yours may function at 'F2'.

Where are these frequencies F1, F2 located in the total spectrum of vibrations? Are they close to each other? What is the range of the frequency band involved? What are the bandwidths of different Purusas? To answer these questions let us consider the analogy of electromagnetic waves. We are familiar with the different bands of electromagnetic waves which appear as light, heat or radio waves. Let us examine the distribution of vibrations in the different bands of the electromagnetic spectrum.

ELECTROMAGNETIC SPECTRUM:

Whenever electric or magnetic fields start vibrating they produce an electromagnetic wave. The electromagnetic wave travels in space at the speed of light which is 300,000 kilometers per second. As the fields fluctuate from maximum to minimum and back to maximum, the wave travels in space forming successive crests and troughs. The

distance between two successive crests is the wavelength. If the vibration makes one complete swing or one cycle in one second, the wavelength would be 300,000 kilometers; if it makes 1000 cycles per second, the wavelength would be 300 kilometers. The unit of one cycle per second is called one Hertz (hz) following the name of the scientist who first discovered electromagnetic waves. Thus a frequency of 1 khz is 1000 cycles per second giving a wavelength of 3000 km; a frequency of 1 mhz (megahertz) is 1 million cycle per second or a wavelength of 300 meters; a frequency of 1 ghz (gegahertz) is 1000 million cycles per second producing a wavelength of 0.3 meters or 30 centimeters. And so on. As the frequency increases, the wavelength decreases; the product is always the same:

Frequency x Wavelength = 300,000 km/sec

The electromagnetic spectrum is infinite extending beyond our range of perception on either side. With the help of scientific instruments all we can perceive is frequencies from a few Hertz to a few gega-gega Hertz (gega-gega is trillion times trillion or 1 followed by 18 zeros). At the low frequencies we perceive the electromagnetic waves as fluctuating electric and magnetic fields, while at the high frequency end we see them as cosmic rays. The bands of electromagnetic vibrations which we can detect by scientific instruments or by direct perception are shown below:

1.	Low frequency power induction	100 hz and below
2.	Long wave radio	100 hz - 300 khz
3.	Medium wave radio	300 khz - 1500 khz
4.	Short wave radio	1.5 mhz - 30 mhz
5.	VHF radio and TV	30 mhz - 100 mhz
6.	UHF radio and TV	100 mhz - 1000 mhz
7.	Microwave communication	1 ghz - 1000 ghz
8.	Infra-red (heat waves, directly perceived)	1 k-ghz - 100 k-ghz
9.	Visible light (all colours directly perceived)	100k-ghz - 1m-ghz (1015 hz)
10.	Ultra-violet light	1 m-ghz - 10 m-ghz
11.	X-rays	10 m-ghz- 1 g-ghz
12.	Gamma rays	1 g-ghz - 10 k-g-ghz
13.	Cosmic rays (10^{22} Hz and above)	Above 10 k-g-ghz

MENTAL VIBRATIONS:

The vibrations of nerve currents which build up in the brain to give us a perception of our surroundings are not electromagnetic waves nor do they travel in space at the speed of light. They are vibrations which originate with nerve impulses but then resonate at high frequencies to give us perceptions of sensations, feelings and mental concepts. The nerve currents fade out but the conceptual patterns of vibrations remain stored in the cosmic spectrum. The cosmic vibrations are not physical but mental. They are the result of the space-time limitation of our mental system. They exist everywhere, always. They define space and time as specific paths we trace in the jumble of conceptual patterns. Our mind itself is a bundle of such vibrations located in a specific frequency band which carries the various patterns traced by our brain as memory. The patterns exist independent of the brain and can be picked up by the other brains too if the frequency matches. The brain is only a receiving and processing instrument. It gets associated with a particular band during its lifetime. During its association it processes the information stored in the channel of Purusa. After death the information still remains in the channel and can be used by a subsequent brain which may tune to the same channel. The vibration patterns are eternal so long as the space-time limitation is maintained.

What is the nature of these mental vibrations? What is the medium in which they exist? What is it that vibrates to produce the mental patterns? The mythological answer to these questions is that the vibrations exist only in our consciousness. Our consciousness is the medium which supports them. What vibrates is the field produced by the nerve currents flowing in the brain. The vibrations are mathematical relationships which govern and control the nerve currents to produce recognizable patterns. They have no existence outside of our consciousness. They are only mental concepts.

THE SCIENTIFIC CONCEPT:

If the above picture appears vague and unacceptable to a scientific mind I may submit that we are exactly in the same situation as regards the electromagnetic waves. The electromagnetic waves are the foundation of modern technology. The entire system of telephone

communication, radio broadcast, TV and the modern technologies of satellite communication, microwaves, radio astronomy and fibre-optics are based entirely on one common entity: the electromagnetic waves. And yet we know as little about their real nature as we know of the mental waves. Earlier the light beam was considered to be a stream of particles travelling in straight lines. Later light was identified as a wave. A hypothetical medium 'Ether' was assumed to support the light waves. Subsequent scientific investigations by Micholson and Morely established that if there was an ether, it was a part of the observer and moved along with him. This was unacceptable to science and so the ether theory was discarded. The light waves remained without a medium till they were found to be electromagnetic waves. But still the electric and magnetic fields acting at a distance in space without a medium are an anomaly. The quantum theory described the electromagnetic waves as packets of energy floating in space in a probability distribution which follows a wave equation. The waves are, therefore, called waves of probability - a pure mental concept. A mathematician, Maxwell, had formulated mathematical equations defining electromagnetic waves much before the scientist Hertz actually observed them. Now it is believed that the waves are actually only Maxwellian equations influencing the mind of Hertz as also of all of us. We are able to use them for radio and TV only because our sense inputs and mental concepts follow the mathematics of the Maxwellian equations.

The vagueness which exists in our concept of electromagnetic waves flourishes equally well in all the other scientific investigations and in the fundamental principles of life and material existence. The modern scientist who looks at the fundamental particles of material existence finds that the observer cannot be divorced from the process of observation and becomes an active participant in the observed behaviour of the particles. The consciousness of the observer appears to guide the matter under observation. Even in the vast field of space the basic parameters of scientific measurement namely the length, the mass and the time appear to be relative to the observer and his relative motion. Einstein found that the measures of length, mass and time will be different for different observers moving relative to one another with speeds approaching the speed of light. In fact, the speed of light became the limiting factor for all moving matter. Yet the modern observations in astronomy establish phenomenon depicting speeds

exceeding the speed of light. There is no explanation and the vagueness continues.

Whenever we attempt to investigate any phenomenon scientifically and objectively independent of the observer, we run into difficulties. The consciousness of the observer appears to cover the total field and cannot simply be wished away. All scientific attempts to establish the existence of memory as a deposit in the cells and cavities of the brain have so far been unsuccessful. Our entire perception of this world is based upon our memory and knowledge. Yet we do not know how and where long term memory is stored in the brain. The phenomenon of life: the entity which distinguishes a living protoplasm from a dead one is still a mystery to science. A protoplasm is the simplest chemical form of life which shows intelligence. It distinghishes between food and poison when alive. When dead, the same chemicals are still there but the intelligence is gone. What has undergone a change, physically or chemically, is just not known.

THE MEDIUM OF CONSCIOUSNESS:

In contrast to the vagueness prevailing in the scientific thought, the mythological explanations are far more simple and logical. Once we accept the illusory nature of this universe (Maya), there is no need to establish any phenomenon independent of the observer. We have to look for explanations within the field of consciousness of the observer. This field, as we have seen, is set up by the bandwidth of the channel of the Purusa which is guiding the activities of the living being. Let us therefore revert back to the discussion of the Purusa and its field of consciousness.

We have defined universal consciousness as the information content of the entire spectrum of vibrations which emerge from void under space-time limitation. This spectrum contains all the knowledge that exists or can exist, that is, all that is knowable. We can denote this spectrum by God or Isvara. AUM is the general designation. AUM starts with 'A', with the mouth fully open and ends with 'M', with the mouth fully closed. It denotes the totality enclosed in one Being. This spectrum of vibrations is infinite. It covers all vibrations from frequencies which are infinitely low to those with frequencies infinitely

high. Where, in this infinite spectrum, shall we place the channel of Purusa? Where, in fact, lies the frequency of 1 Hertz? This is a debatable question. In fact life can exist, and perhaps does exist, anywhere in the spectrum where a channel can be placed with a certain bandwidth, and a brain is provided to demodulate the channel and match vibration patterns. The frequency of 1 Hz or 1 cycle per second is quite arbitrary. It is based upon the arbitrary measure of time of one second. We have adopted the measure of time as one second only because it suits us. It is a duration which we can easily perceive. It is close to our heart beat and many other biological functions of our body. Otherwise it has no relevance to the total spectrum. Life could as well exist, with all its functions and events, in time domains of microseconds or in domains running into millions of years. What we perceive in this spectrum is in relation to our time measure. We can only perceive events from a few milliseconds to a few years. That is our universe.

All over the spectrum of universal consciousness there are vibrations superimposed upon one another and interacting with one another producing patterns of interference and modulation. Patterns are the same irrespective of the frequency range we select. Within a narrow frequency range vibrations interfere to produce attributes of Tamas, Rajas and Sattva. In a wider frequency range modulation takes place and patterns of lower frequencies ride over vibrations of higher frequencies. They become intelligent vibrations and form channels of consolidated information. Whenever this transformation produces a unique pattern, an object is formed. An object is nothing but a unique pattern of vibrations stored in a channel at a unique frequency. Patanjali defines an object as the unique transformation of the three attributes:

परिणामैकत्वाद्वस्तुत्त्वम् ।

'Parinamikatvad vastu-tattvam'.

Yoga-Sutra IV-14

(The essence of the object consists in the uniqueness of transformation of the Gunas).

Thus all the objects we see around us are actually channels of

unique frequencies containing unique combinations of the three attributes of Prakriti. At lower frequencies the information contained in the channels is low and hence the objects are simple patterns such as solid stationary objects. At higher frequencies the channels take more information and the objects become more dynamic and display more intelligence. As we move higher in the frequency scale, we see plants and vegetables and then on to simple animals. At still higher frequencies we see more intelligent animals till we reach the human being. This is the limit of our perception, for our own channel cannot take frequencies higher than those which define a human being. But, of course, channels must exist at higher frequencies too. They must define Divine Beings whose intelligence and actions we cannot comprehend. The scale must go to infinity on either side.

INDIVIDUAL CONSCIOUSNESS:

If we look at a small portion of the total spectrum where our own channel is located, we will see many channels depicting objects of different levels of intelligence. Starting from inanimate objects with little or no intelligence, we shall see plants and animals leading to highly intelligent human beings. We can divide this portion of the spectrum into the following bands:

1. Mineral Kingdom
2. Vegetable Kingdom
3. Animal Kingdom
4. Human Beings
5. Divine Beings

Our own channel is located obviously some where in the band 4. What is the frequency of this band in terms of Hertz or cycles per seconds? And what is the bandwidth of our channel? Let us examine these questions from the best evidence of our own experience. To start with let us analyse the lowest frequency vibrations which the brain perceives.

SENSATIONS:

The nerve impulses produced by our sense organs meet in the brain

and produce circulating current. The nerve currents which find positive feed-back paths regenerate and set up unique vibration patterns in the cerebral cortex of the brain. Once set up, these vibrations reverberate for a short time before they die out. During the period of reverberation we have a sensation which lasts for a fraction of a second. For example if we have an instant glimpse of a picture, the impression lasts in the brain for about 1/16th of a second before fading out. In a cinema hall when we are watching a movie, individual pictures are projected on the screen for 1/24th of a second each. In between there is darkness. However because of the reverberation in the brain the successive impressions overlap and we see the picture as a continuous one with the characters moving about. In the same way when the brain receives repeated impulses from various sense organs we have a sensation of a continuous environment around us with sights and sounds making different patterns as the time progresses. All these patterns are made up of nerve impulses which are reverberating in the brain.

The nerve impulses which travel in individual nerve cells are of very low frequency, say 5-6 impulses per second. But when thousands of such nerves meet in the brain the resultant patterns which are formed may have frequencies of a few hundred khz. The electro-chemical activity inside the brain can be seen by an instrument called electro-encephalograph. The standard wave patterns which are seen have been classified into waveforms known as alpha, beta, delta and theta waves. These patterns have basic frequencies from 1 to about 100 hz only, but each waveform carries very complex patterns of ripples. These ripples, if analysed,will contain frequencies of a few kilohertz. Thus the sensory patterns formed in the brain go upto frequencies of about 100,000 hertz. This range of vibrations covers all our visual impressions, audible sounds, sensations of smell, taste and touch, sensations of temperature and pressure and also all the sensations produced in the body such as achs, pains, itch, hunger, thirst etc. This band of vibrations may be called the plane of sensations. In theosophical terms it is referred to as the physical plane of our consciousness.

EMOTIONS:

Vibrations of a complex shape are known to produce harmonics

which are also vibrations but of multiple frequencies. Thus complex vibrations of basic frequency 5 khz will contain harmoics of 10 khz, 15 khz, 20 khz, and so on upto infinite frequencies. The waveforms which are observed inside the brain by electro-encephalograph are highly complex and rich in harmonics. Thus, in addition to the basic frequencies generated by nerve cells, the brain also reverberates with much higher frequency vibrations due to harmonics. The speed at which nerve impulses travel in the brain is about 80 - 100 meters per second. The nerve cells inside the brain are of the size of microns or less. When these nerve cells join to produce regenerative circulating currents the frequency of circulation goes upto several megahertz With millions of nerve cells jointly producing such currents the frequencies go upto hundreds of gegahertz. Currents of such high frequency produce continuous sensations which we recognize as pain or pleasure. Different patterns appear as anger, worry, grief, doubt etc. These are our feelings and emotions. Once such currents are set up they last for a longer time than in ordinary sensory perception. Circulating currents of such high frequencies are self-sustaining and may develop in the brain even without any sensory input or as a result of vibrations recovered by the brain from the channel of the Purusa. We may thus have feelings of elation, depression, anger or worry merely as a result of thought process without any sensory input. The range of vibrations which appear to the brain as feelings and emotions is the plane of emotions of our consciousness. In theosophical terms it is referred to as the Astral plane. Its range goes upto a few hundred gegahertz.

MEMORY:

We have seen that memory is stored in the channel of Purusa as a modulation upon the vibration of the Atma. The sensory impressions which reverberate in the brain do not, however, modulate the Atmic vibration directly for the frequency of the Atma is much higher than that of the sensory impressions. A method of stage-by-stage modulation is adopted in which impressions of low frequencies modulate vibrations of a slightly higher order of frequencies. The inter-modulated products so formed then modulate vibrations of still higher frequencies, and so on till the final pattern formed modulates the Atmic

vibration and gets stored in the channel of the Purusa. Patanjali has described this process in the following words:

चित्तान्तरदृश्ये बुद्धिबुद्धेरतिप्रसंगः स्मृतिसंकरश्च् ।

"Cittāntara-dṛśye buddhi-budder
ātiprasaṅgaḥ smṛti-samkaraś ca".

Yoga-Sūtra IV-21

(If congntion of one mind by another be postulated, we would have to assume cognition of cognitions and cross-production of memories also).

A very similar method is adopted by communication engineers when they have to transmit a variety of information over a single microwave beam. The lowest frequency telegraph signals modulate the voice frequencies and are stored in telephone voice channels. The process is called Voice Frequency Telegraphy (VFT). Voice channels of 4 khz bandwidth then modulate vibrations of higher frequencies say 30 khz to form groups of around 100 khz. A 4 mhz wave transmitted over a coaxial cable carries 900 telephone channels, each of which may carry 24 telegraph channels. Modulating still higher frequencies TV signals at 64 mhz are also added and the entire pattern can then modulate the microwave beam at say 7 ghz. The single microwave beam now carried TV programmes, high speed data, radio music, thousands of telephone conversations and low frequency teleprinter and telegraph signals. From this microwave beam we can then pick up any one of the signals by a similar process of stage-by-stage demodulation.

In the cereberal cortex of the brain there are a large number of minute cavities which act as resonators of very high frequency vibrations. Communication engineers are familiar with cavity resonators which are used to generate very high frequency vibrations. The minute cavities of the brain sustain vibrations of several thousand gegahertz. These vibrations are excited when energy flows into the cavities through nerve impulses. Once excited these vibrations sustain for a short time and get modulated by any sensory patterns or feelings which are reverberating in the particular lobe of the brain at that time.

The patterns are now stored at unique frequencies and can be recalled if the same cavities are excited again.

The lowest frequency images of sensory patterns usually modulate vibrations of the emotional plane, that is, vibrations which appear as feelings of pleasure and pain. Thus most of the images in our mind are associated with our feelings. The face of the mother is associatedwith a feeling of happiness. When a child sees its mother it is happy. Conversely if the child is very happy it remembers mother and runs to her. The inter-modulation products containing sensory images and feelings together then modulate vibrations of the mental plane excited in the cavities to become memories of various objects and events of our life. We can recall these memories by exciting the same cavities by conscious effort. In many cases, however, we are unable to recall an event by effort but the memory is still there and may come to mind automatically if the same cavity is accidentally excited. The cavity vibrations which store memory go upto a million gegahertz and are classified as the lower mental plane of our consciousness.

INTELLECT AND REASONING:

Sita is the daughter of Avinash. Avinash is the father of Rakesh. Therefore Rakesh must be Sita's brother. This type of reasoning is broght about by the interaction of vibrations in the cavities of the brain. The names and relationships are first associated as intermodulation products. The relationships in abstract are a higher order memory kept at higher frequencies. Once recalled the abstract relationships produce fresh associations to define new relationships. When we move from specifics to generalities we are transferring impressions from lower frequencies to higher ones. The higher frequencies carry much more information which is recalled all together to connect individual events by common principles. Patanjali has defined four levels at which information is maintained in regard to the perceptible attributes.

विशेषाविशेषलिंगमात्रालिंगानि गुणपर्वाणि ।

'Viśesavisesa - lingamātrālingāni gunaparvāni'.

Yoga-Sūtra II-19

(The stages of the Gunas are the particular, the universal, the differentiate and the undifferentiated).

I recognize my pet dog Peter by his hair and balck spots. This is a particular memory kept at the lowest level. What should I give Peter to eat? dog's food because Peter is a dog. Dog is a universal classification kept at a higher level of memory. What should I do if Peter falls ill? Take him to a vet for Peter is an animal. The term animal is a higher order generalisation and represents a differentiated class of living creatures. Will Peter grow old? Yes, because all living creatures do. Living creatures embody all life, undifferentiated. It is a general principle kept at the highest location of our memory.

When we connect objects and events by logic we recall memories stored at higher frequencies and try to match patterns to fit higher order principles or classifications. The entire processing in the brain is carried out by matching vibration patterns at different frequencies. The frequencies used for reasoning and logic go upto a few million gegahertz. This band of frequencies is covered in the higher mental plane of our consciousness.

DISCRIMINATION AND JUDGEMENT:

My dog Peter is ill. Should I take him to the local veterinarian or to the town hospital? Last time I took him to the local vet he picked up infection. The town hospital is far. And Peter may pick up infection there too. Who knows? What should I do?

Our brain is constantly processing deliberations of the nature described above. Each proposition of the arguments represents a sequence of events which are stored in the memory as an experience of our life. In fact these experiences are nothing but high frequency vibrations modulated by the intermodulation products arising out of processing by the brain of the various memories and reasonings connecting them. When the vibrations produced in the cavities of the brain and their harmonics multiply, they produce inter-modulation products which lie in the frequency range of a few trillion gegahertz or a few gega-gega hertz. These products can be recalled by recalling individual component vibrations. Thus a single incident may recall to

memory the entire story of an experience of our life. The brain keeps matching patterns of waveforms at different frequencies. Even if a part of the pattern matches, the component vibrations are able to excite new patterns which recall associated experiences.

In a computer also we match patterns to select records and display them. Computers work on digital principle and comparison is carried out bit by bit. Each bit can be a '0' or '1'. All records are maintained as combinations of zeros and ones. Even if one bit of a sequence does not match, the record is rejected as not relevent. The brain, however, works on analogue wavepatterns and comparison is made on the basis of the presence or absence of component vibrations. So even if the waveforms do not exactly match, an associated experience is still recalled if a few component vibrations are common. Thus we are able to recall and connect our experiences on the basis of common incidents even if one part of the incident, say a face or a voice is common.

The brain is constantly matching patterns of past experiences with those of desired objectives. The products produce alternatives for future course of action. Descrimination between alternatives is then carried out by the extent of match or mismatch between a given alternative and the desired objective. The frequencies used to develop alternatives and look at them along with past experiences in a combined pattern go upto a few hundred gega-gega-hertz. The plane of consciousness which handles vibrations of this order is called the plane of wisdom and discrimination. In theosophical terms it is called the Buddhic plane.

INSTINCTS, INTUITION AND INSPIRATIONS:

When the brain is functioning in the Buddhic plane of consciousness, it is developing very high frequencies which can store the entire information of a situation as a whole, including the memory of names and impressions involved , sequence of events and also the end results. There are two methods by which the brain picks up such high frequency vibrations. In the first method the brain develops higher

frequencies by successive multiplication of lower frequency vibrations of the sensory and memory planes. In the second method the brain derives high frequency vibrations directly from the Atmic vibration by the process of demodulation. Both process work together. The first set of vibrations produce a feeling of awareness of a situation based upon our knowledge and past experience. The second set of vibrations produce a belief or conviction about a given situation which is not based upon any previous knowledge or experience. The first set produces decisions based upon discrimination and judgement; the second set produces decisions based upon instincts or intuitions.

When I say, "I will not take the dog to the vet because I fear he may pick up infection as he did last time," I am making a judgement based upon my past experience. But if I say, "I do not want to take the dog to the vet because I have a hunch the dog will resent and may run away or even die," I am making a decision based upon instinct or intuition. Instincts, intuitions and inspirations are ideas which enter our brain without any known source of origin. These are patterns which the brain demodulates from the Atmic vibration or from other high frequency vibrations of the cosmic spectrum. Once the patterns enter the brain they may match with sensory and memory patterns to give us a coherent idea in terms of subjects of our knowledge and experience.

The frequencies at which the brain receives instincts and inspirations are higher than those of the Buddhic plane. This higher band is sometimes referred to as the Lower Atmic Plane. It contains vibrations in the range of a few thousand gega-gega-hertz. It is in this plane generally that we take decisions for further course of action. In this plane we have a blend of our ideas based upon our experiences as well as our instincts, convictions and beliefs.

THE VOICE OF CONSCIENCE:

When we are functioning in the Lower Atmic plane of consciousness, we are quite remote, in terms of frequency of vibrations, from the planes of sensations, emotions and intellect. The frequency domain is much higher and very close to the frequency of our Atma.

There is considerable amount of processing of lower frequencies to be done in the brain before we reach this plane. On the other hand the patterns we demodulate directly from the Atmic vibration or other vibrations of the Atmic plane reach the brain in one or two stages of demodulation. Therefore the instincts and inspirations appear to come to mind directly instead of through the brain. The only area of the cerebral cortex involved is the frontal lobe. This area, known as the association area, receives processed signals from other lobes of the brain. It also demodulates directly signals from Atmic frequencies. The directly received signals do not involve any other part of the brain or the nervous system. They continue to originate so long as the association area is operative even though other areas of the brain are asleep. To keep the frontal lobe operative the only organ of the body involved is the heart which pumps blood supply into the brain. These signals, therefore, appear to come from the heart. We call them our inner urges or voice of our conscience.

Proceeding to still higher frequencies we reach the higher Atmic plane in which our own Atma is located. This is the highest plane of our consciousness. In this plane we see individual living creaturess not so much by their bodies as by their souls. There is a unity of purpose in life and the instinct of survival is common in all living beings. The feelings of compassion and mercy for other living beings arise in this plane of our consciousness. Also in this plane we have glimpses of still higher frequency vibration patterns which appear to us as divine beings or Gods and Goddessess. This is the plane of our religion and faith. Different people interpret signals of this plane differently according to their own breeding and costoms they have seen from childhood. Hence we have several religions with different sects, faiths and beliefs. The beliefs which arise in the Atmic plane cannot be understood or argued on the basis of our intellect or reasoning. They lie much above the sensory and memory planes and beyond our own comprehension.

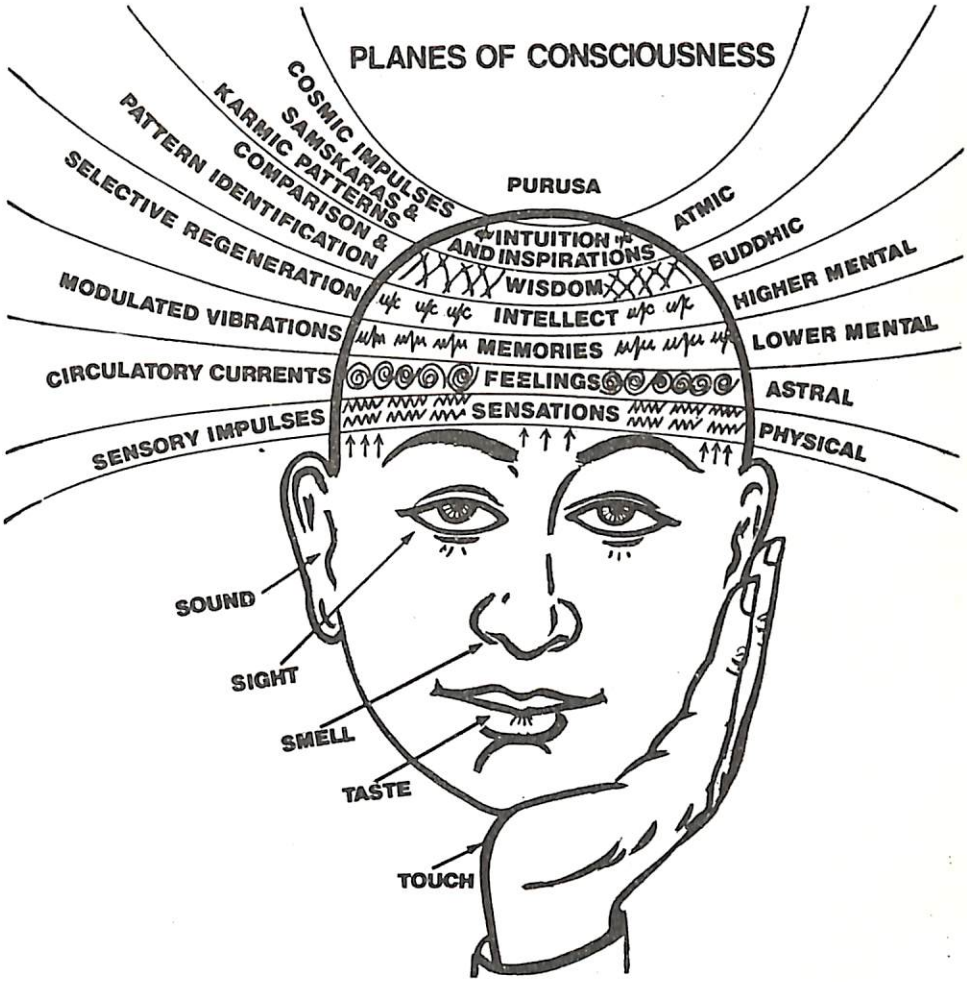
PLANES OF CONSCIOUSNESS:

Based upon the frequency of vibrations which the brain handles within the channel of Purusa, we can divide the bandwidth of our Purusa

into the following bands. These are known as the planes of consciousness in theosophical literature.

Table I

No	Plane of consciousness	Frequency range	Mental experience
1.	Physical plane (plane of sensations)	Below 100 khz ($0-10^5$ Hz)	Sensations of sight, sound, taste,smell, heat, cold, hunger, thurst, itch etc.
2.	Astral plane (Plane of emotions)	100 khz to 1000 ghz ($10^5 - 10^{12}$ Hz)	Feelings of pleasure, pain, anger, worrry, passion, greed, pride etc.
3.	Lower mental plane (plane of memory)	1 k-ghz to 1 m-ghz ($10^{12} - 10^{15}$ Hz)	Memorising impressions and events of senses and emotions, and recall of memory.
4.	Higher mental plane (plane of intellect)	1 m-ghz to 1 g - ghz ($10^{15} - 10^{18}$ Hz)	Logic and reasoning, Intellectual concepts, Understanding of the process of physical nature.
5.	Buddhic plane (Plane of wisdom)	1 g-ghz to 1000 g-ghz ($10^{18} - 10^{21}$ Hz)	Discrimination and decision making. Experience and abstract objectives,
6.	Lower Atmic Plane (Plane of intuition)	1 k-g-ghz to 1 m-g-ghz ($10^{21} - 10^{24}$) Hz)	Instincts, intuition and inspirations, original ideas.
7.	Higher Atmic plane (plane of faith and religion)	1m-g-ghz to 1 g-g-ghz ($10^{24} - 10^{27}$ Hz)	Faith and religious beliefs. Divine principles and visions of the supernatural.



Planes of Consciouness

The operative function of the brain is to process vibrations produced by nerve impulses. Depending upon the source of impulses and the nature of processing involved the activity of the brain can be divided into five areas known as the five planes of consciousness. The impulses received from sense organs produce patterns in the brain which we recognise as sensations. This activity is in the physical plane of consciousness. Self-sustaining circulating currents in the network of neurons produce feelings which are in the Astral plane. Modulation of vibrations leads to storage of information and becomes the memory of lower mental plane. Interaction of modulated vibrations produces cause-effect equations or intelligence of the higher mental plane. Vibrations demodulated from the Atma or directly received by the brain produce intuitions and inspirations of the Atmic plane. Interaction of the atmic and mental plane vibrations leads to discrimination and decision making which is the Buddhic plane of consciousness.

Starting from the sensory impressions and feelings generated in the brain by nerve impulses, the vibrations are successively multiplied in the brain to produce memory carrying vibrations, patterns of abstract thoughts and concepts of fundamental principles of physical existence. At this point the brain adds patterns which it demodulates directly from the cosmic vibrations to give us inspirations and original ideas. Decisions for further action are then taken based upon the resultant output of the sum of the two patterns. The resultant output energises the motor area of the brain and passes appropriate signals of motor nerves to produce speech or muscular action.

THE LIMIT OF COMPREHENSION

A basic principle of the theory of vibrations is that you cannot modulate a vibration by a frequency higher than its own frequency. If the frequency of the carrier vibration is 'F' and the modulating pattern has frequencies from '0' to 'f' then the pattern cannot modulate the carrier if 'f' is greater than 'F'. If we try to modulate only frequencies upto 'F' (which will appear) in the intermodulation products omitting all higher frequencies. When the brain carries out stage-by-stage modulation to form memories the same principle operates. Thus patterns of the sensory plane can modulate vibrations of the plane of emotions but the reverse is not possible. To form memories of sensory images and emotions we need still higher frequency vibrations of the mental plane. Again, to carry our total experience of impressions, feelings and mental concepts, we have to use a still higher frequency of the Buddhic plane. To know an object in all its aspects we must carry its sensory images, associated feelings and mental concepts as a modulation upon a unique vibration of the Atmic plane. It is the final modulation upon the vibration of the Atma which makes us aware of our environments as part of our knowledge. Patanjali has described knowledge of an object in the following aphorisms:

तदुपरागापेक्षित्त्वाच्चित्तस्य वस्तु ज्ञाताज्ञातम्।

"Tad uparagapeksitvac cittasyavastu jnatajnatam".

Yoga-Sutra IV-17

(Things are known or unknown to the mind, being dependent on the colouring which they give to the mind).

दृष्ट्रदृश्योपरक्तं चित्तं सर्वार्थम् ।

"Drastr-drsyoparaktam cittam sarvartham".

Yoga-Sutra IV - 23

(Coloured by the seer and the seen, the mind is able to understand everything)

(Translations by Swami Vivekananda)

Here the term 'colouring' I have interpreted to define the process of modulation of a vibration. We know and comprehend all that modulates our Atmic vibration. The highest frequency signals that we can comprehend are those that can modulate the Atma. But the brain receives signals from the cosmic spectrum even of higher frequencies. We cannot comprehend these signals except their operative part which lies in the lower frequencies. The high frequency signals are the intuitive voices of our visions which give us guidance for our action but we cannot explain or understand the reasons behind them. These are our faiths and beliefs which give us a conviction but we cannot explain or argue them in terms of our intellect.

The limit of comprehension set by the frequency of our Atma gives us a method to determine the range of frequency in which our Atma is located in the cosmic spectrum. In physics, when we study microscopic particles of molecular dimensions, we come across a strange phenomenon which we cannot explain. If we try to measure the position and the momentum of a particle at the same time we cannot do so accurately beyond a certain limit. If the momentum is measured accurately the position becomes vague while if the position is fixed, the momentum becomes uncertain. The product of the two is limited by the smallest value which is the same for all observations. This constant limit is denoted by 'h' and is known as Plank's constant. Its value is 6.55×10^{-27}. The same limit operates if we try to measure the energy of a particle at a fixed time. If the time is fixed the energy of a particle at a fixed time. If the tiime is fixed. The energy becomes vague; if the energy is determined the time becomes uncertain. Why it should be so is not known but the principle operates without fail. It is known as the Heisenberg's principle of Uncertainty. The entire quantum

physics is based upon the principle of uncertainty and fixes descrete steps for energy levels; in between these quantized levels we just cannot peep.

I have related the Heisenberg's principle of uncertainty to the limit of comprehension we must experience if we try to know vibration patterns which exceed the frequency of our Atma. The time limit of 6.55×10^{-27} seconds corresponds to a frequency of 0.15×10^{27} Hz. I have, therefore, put the upper frequency limit of the planes of consciousness to 10^{27} Hz. In Table I given above the frequencies of the different planes of consciousness have been roughly calcuated on the basis of the amount of information that must be carried in each plane. The limit of Higher Atmic plane is then fixed at 10^{27} Hz in accordance with Heisenberg's principle of uncertainty. All human Atmas must lie in this band. If we take the average bandwidth of a human soul to be around 10^{15} Hz, (going upto mental plane) we can still accomodate 1000 billion human beings in the band of 10^{27} Hz. The current human population is only 5 billion. Hence there is still considerable scope for increasing the human population even with each generation becoming more knowledgeable, that is, the bandwidth per soul increasing.

Having fixed the location of the human Purusas in the cosmic spectrum, we can now place the inferior life forms - animals, insects and vegetation - in the lower bands of the Atmic plane, say between 10^{24} - 10^{27} Hz. The bandwidth per unit of life in these species must also be much smaller depending upon the highest plane of consciousness in which the living creature can function. Most animals, for example, function only in the sensory plane with a few emotions but with little memory. Some domestic animals show some memory and intelligence. The animal instincts are biological reflexes determined by the genetic growth of the brain and not high frequency vibrations picked up from the cosmic spectrum. Hence we can assign band widths of 10^{12} Hz or less for the rest of living kingdom. They can all be accommodated in the Atmic plane from, say 10^{22} Hz onwards.

What is the probability that two or more human beings tune to the same Atmic vibration? Or that a new born baby's brain is tuned to a channel of Purusa which has previously been used by another human being? What will happen if the channels of the Purusas of two living

beings overlap? In the band of the higher Atmic plane, we have seen that aound 1000 billion human Purusas can be accommodated. With the human population touching five billion the probability of coincidence is one in 200; the probability of partial overlap of Purusas is still more. This is a fairly high probability and we should encounter many cases where different human beings are operating from the same channel of the Purusa. What affinity these human beings would feel for one another? What will be common in their experiences and destiny? We shall look into these questions in the next chapter.

CHAPTER VI

THE IDENTITY OF SELF

"Who am I? What is my real identity?"

When we attempt to answer this question, the mind wavers between the different planes of our consciousness. From the plane of sensations we move to the plane of emotions and then to the plane of intellect. We try to look inwards and form a picture of ourselves in each plane. Few of us are able to go beyond the planes of intellect and wisdom to reach The Atmic plane where the real identity of Self lies. Let us see the view of our Self in the different planes of our consciousness.

THE PHYSICAL IMAGE

In the physical plane we identify ourselves by our body and its senations of sight, sound, smell etc. The biological urges of the body also give us an awareness of our Self. Standing in front of a mirror I look at the image. "That's me. How handsome !" I recognize myself by my features. I decorate my body with beautiful clothes and put on a scent as a mark of distinction. I hum a tune and identify my voice. "Yes, that's me!" Then I define myself as a man of 55 years of age; weight 68 kg; height 5'7"; fair complexion with black eyes and a mole on the neck. For a more intimate description I say I have a taste for spicy foods and that I perspire heavily in summer. All the time I am looking at my body and its functions. My pleasures and pains are those experienced by my body. A handshake or an embrace gives me plesure while a sharp blow on the head is painful. I organize my life to provide physical comforts to my body and entertain myself by sights and sounds of my taste. I go in for an air - conditioned house with hot or cold water for my bath. Food cooked to my taste; a TV and a music system provide all that I need for my comfort and happiness. But am I happy? Not necessarily. Happiness depends upon my emotional personality and its compatibility with my environment.

Happiness is not the same thing as physical pleasure. Identifying myself with my body I have forgetten that I am also a bundle of emotions. My emotional needs very often superimpose and surpass the needs of my body. Let us look at this second identity of Self.

THE EMOTIONAL SCENE:

When the brain switches from the physical plane to the plane of emotions, it temporarily detunes itself from the low frequency vibrations of nerve impulses and tunes to the high frequency resonance of the Astral Plane. The awareness shifts from sensations to feelings. The identity of my Self as the hard, solid body is given up and I now redefine myself in terms of the finer abstract emotional relationships. I am the dear son of my mother and the beloved husband of my wife. Mr. X is my friend but I hate Mr Y; he is my enemy. I love my children but I become very angry if they do not behave. I am generous but I would like to have a lot of money. I am peaceful but I can become violent if attacked. I am very brave but am mortally afraid of lizards. I am attached to my kith and kin but would not get involved with them. Finally I am an Indian and proud to be so.

The identity of Self in the Astral plane does not depend upon the shape and size of the body. In fact the statements made above can equally apply to anyone, male or female (using, of course, appropriate gender) or even to an animal. However, each statement carries a built-in identity of the physical features of the persons concerned. When I say, "I love my children", I have the image of their faces in the back of my mind. This is because the higher frequency vibrantions of the Astral plane carry impressions of the physical plan as their modulation of memory. The identity of my Self in the Astral plane is, therefore, a larger entity which embodies my identity in the physical plane.

In the physical plane the brain identifies itself on the basis of the nerve impules it receives from various organs of the body. The body becomes the important entity. Life starts from the date of birth and ends on the day of death. There is nothing before or afterwards to preserve the identity of the Self. That is the scientific view. However, in the Astral plane the brain is tuned to the high frequency self-

sustained virations which resonate in the area of association of the brain. The physical picture of the environment melts into its emotional reaction. The pleasures and pains of the body transform into happiness or sorrow of the heart. Since no limb of the body is involved; not even any specific lobe of the brain, the feelings and emotions appear to arise in the heart. The Self then takes the form of something that resides in the heart.

Now suppose I start analysing my feelings and emotions as a psychologist. I would say my hatred of Mr Y arises because of such and such incident or that my greed for money arises from so and so genes I inherited from my father's family. Now who is this intellectual Self who is analysing my emotional Self? Who is looking at my Self from a distance and defining the cause and effect equations of my feelings and emotions? Obviously I have a personality in the intellectual plane which is quite distinct and remote from my Self in the physical and emotional planes. Let us examine our identity in the plane of intellect.

THE INTELLECTUAL SELF:

The identity of Self in the mental plane is simply the mind. It is the vast collection of impressions and information in the memory which I call my knowledge. My identity in the mental plane is my education and my qualifications. I am a B.Sc. with post-graduate diploma in Electrical Communication Engineering. I specialize in electronics and digital communications. My field of interest extend to astronomy and philosophy. I am the author of a couple of books, etc. This identity of my Self is again absolutely independent of my figure, features or feelings. Yet it is a complete identity which can be used to fit me into a job. It is based upon the information I have stored in the channel of my Purusa.

As we have seen memory is stored upon high frequency vibrations sustained by minute cavities in the brain. Memory is not a part of the brain but can be recalled by stimulating specific cavities so that vibrations of specific frequencies are generated. The impressions contained in these vibrations then get domodulated and energise the sensory lobes and associated feelings in the brain. The association area

of the brain mixes the different memories in varous permutations and combinations to form abstract mental concepts. This is the thought process which takes place continuously in the brain. The vibration patterns which form in the area of association of the brain at any time become the subject matter under consideration or the object in view at that time. It may not be the impression produced by the eyes or the ears individually but may be a combination of both or independent of either of them. In mythological terms this object or the content of the mind at any time is known as 'PRATAYA'.

In order to establish my identity in the mental plane I must fix a Prataya in my mind which contains all the information which I have stored in the channel of the Purusa. This would mean my brain must tune to the Atmic vibration and demodulate the entire pattern of its modulation. But the moment I do so the tuned circuits of the brain start resonating to different patterns giving me my pet images and emotions. I cannot look at myself intellectually from a distance. Patanjali has described an ingenious method to identify and scan the channel of one's own Purusa. It is as follows.

सत्त्वपुरुषयोरत्यन्तासंकीर्णयोः प्रत्ययाविशेषो
भोगः परार्थात्स्वार्थसंयमात्पुरुषज्ञानम् ।

"Sattvā-purusayor ātyantasāmkirnayoh pratyayaviśeśo
bhogah pararthat svārtha-samyamat purusa jñanām"

Yoga-Sūtra III - 36

"Experience is the result of inability to distinguish between the Purusa and Sattva though they are absolutely distinct. Knowledge of the Purusa results from Samyama on the Self-interest (of the Purusa) apart from another's interest (of Prakriti)."

The practical method is to detune the brain slightly away from the Atmic vibration so that the demodulated patterns shift in frequency. The patterns are still identifiable but do not produce resonance in the brain. One can then look at one's own mentl personality as a distant observer without getting involved in one's sensations and feelings. Of

course, this method can be practiced only after one has accomplished controlled tuning of the brain by meditation. As laymen we can only attempt a dispassionate introspection to study our traits and qualities without emphasising the good points or suppressing the weaknesses. That is the picture of our mental Self.

THE SELF OF WISDOM:

To search for an identity of the Self in the Buddhic and Atmic planes we have to tune to frequencies higher than those of the mental plane. The difficulty here is that we have no physical entity in the body or the brain which we can use as a prop or hold to identify our position. It is only interaction of vibrations which have arisen as products of lower frequency vibrations. We can identify these vibrations patterns only in terms of their lower frequency components. By themselves they are only abstract ideas. I may look upon myself as a man of stature a reliable or trustworthy person. Every adjective I use is an abstract idea which embodies a multitude of qualities each of which is associated with a number of memories of objects and events.

The identity of my Self in the Buddhic plane is thus my total personality based upon my qualities of the lower plane but in completely abstract form, that is, not tied to any specific objects, events, emotions or knowledge. The personality of the buddhic plane is objective oriented and is dependent upon ideas of the intellectual and emotional planes. For example, I may say that I am a good engineer. Here 'good engineer' implies not only my qualifications as an engineer but also my capability of carrying out an engineering job to the satisfaction of all.

It is interesting to note here that as we move to higher frequency vibrations from the mental plane upwards, we get progressively dislinked from the physical body and its traits and even from the brain and its various resonances. Upto the lower mental plane the memory carrying vibrations are still generated and sustained by minute cavities of the brain. But the higher frequency products involved in reasoning and logic are quite dislinked from any physical entity and occur in the environment of the brain but not sustained

by it. The brain guides the processing and records the results but the total process is not recorded. Every time we think of the problem with a different data, the processing is done again and all the steps are repeated. Hence we take, very often, different decisions on identical cases depending upon our emotional involvement or the state of our mind at the time of processing.

THE INTUITIVE SELF:

When we try to build an image of the Self in pure abstract terms we lose completely all contacts with the brain and the Self appears to exist irrespective or independent of the body. .At this point the Self takes the form of a complex pattern of vibrations, the components of which can be identified by the brain but not the pattern s a whole. This is now a free viration pattern which we may call 'Jivatma'. When it is associated with the brain we become aware of our personality and behave accordingly. At other times we are asleep or unconscious and the brain continues to function according to the built-in reflex programmes for maintaining the body but there is no awareness. If a different vibration pattern takes hold of the brain at this time we may even acquire a different personality. This is what happens in the cases of trance when a person is said to have been possessed by an outside soul.

When we are functioning in the lower Atmic plane the brain picks up stray vibrations from the cosmic spectrum in addition to the vibrations of the Jivatma to which it is linked. The linkage in this plane is not by direct tuning as there is no component in the brain which can tune to such high frequencies. The vibration of The Jivatma is supported by the brain by tuning to the component patterns. Once the brain regenerates the component patterns, the composite complex vibration remains linked to the body and the brain. In this situation the brain also picks up other free vibrations whose components may match with patterns that the brain sustains. Thus we get original ideas, inspirations and institutions which do not form a part of our previous memory or experience. If a vibration from another Jivatma is picked up we acquire intuitive knowledge or establish telepathy. The identity of the Self in the lower Atmic plane is therefore somewhat vague and extends beyond the scope of the Jivatma.

THE REAL SELF:

Once we recognize our Self as a free floating pattern of vibrations, independent of the body, our only identity that remains is the frequency in the cosmic spectrum at which this complex pattern of vibrations lies. This is the channel of our Purusa. The vibration which fills this channel is our Atma. Our Atma is the real Self in mythological terms. Purusa is the permanent background against which we percieve this universe and identify our body and mind as a part of this universe. Atma is the mobile entity which associates with the frame of our body and mind to interpret and express the information contained in the channel. All the other identities are temporary and transient. The physical body is born and dies but the Atma is eternal. Atma is the Self. I am not my body or my brain; not even my mind. I am my Atma. I reside permanently in the fixed channel of my Purusa and use my body as a temporary vehicle to explore the cosmic spectrum. Patanjali has described the Purusa as the fixed background of information against which we identify our environments.

सदा ज्ञाताधिन्तवृत्तयस्तत्प्रभो :
पुरुषस्यापरिणामित्वात् ।

"Sadā Jnātas cittā-vrttayas tāt prabhoḥ
purusasyapariṇāmitvāt"

Yoga-Sūtra IV-18

(The modifications of the mind are always known to its lord on account of the changelessness of the Purusa.)

In the atmic plane I identify myself by my ego or Asmita as it is called in mythology. It is my awareness of my 'I-am-ness' as distinct from another living being. My Atma occupies a distinct and individual channel in the cosmic spectrum. In all my perception in the different planes of consciousness I am always aware of my individual identity amongst all the objects I perceive. When I perceive an object the impression may be recorded somewhere in my memory. It is only when the memory vibration has modulated my Atmic vibration in the process of stage-by-stage modulation, that I know the object

and recognize its existence in relation to me. Every cell of my body resonates at the Atmic vibration and it is.the overall pattern of the Atmic vibration which provides an integrity to my body. In the absence of the Atma the body will simply disintegrate and decompose. Atma is my life, my vitality as a living being.

THE SCOPE OF PERCEPTION:

Having identified my real Self as my Atma let me now examine how I differ from other living beings. Firstly my Atma has a unique frequency at which it vibrates. It thus occupies a unique position in the cosmic spectrum. This is the frequency at which all the cells of my body are integrally resonant. Every living creature has one such unique frequency. It is technically possible that two or more living beings are resonant to the same frequency. But it is highly improbable in case of human beings because the cellular structure of the body has so many fine distinctions. It is more probable in case of minor animals and almost certain in case of insects and other simple living organisms of the vegetable kingdom. What happens if a group of life units are tuned to the same Atmic frequency? Not only they will have identical perception but the observations of one will automatically be perceived by the rest of the group. In such cases the group of life units are said to occupy a group soul. Examples are ants of one nest, bees of one hive and birds of one flock which fly in unison. These creatures, though seperate from one another in space, appear to be guided by a common thought. They work in unison for a common purpose without any apparent means of communication. A swarm of bees moves about as one body. Locusts attack farm field as one organised army. A flock of migrating birds fly and land all together without any signal. They fly in formation for miles together, a task found to be difficult and exacting even by aircraft pilots. All this is possible because the individual units of life share one soul. They are all tuned to the same Atmic vibration and receive their instincts, intuition and inspirations from the same source.

The second point of distinction between Atmas of different living beings is the bandwidth they occupy. This is the width of the channel of the Purusa in the cosmic spectrum in which the information of the memory is kept. The wider the bandwidth, the greater is

the scope of our perception. For example, animals occupy a very narrow band-width which covers only sensory and emotional planes. They are therefore able to perceive only sensory stimulli and exhibit emotions to some extent. They cannot perceive intellectual concepts nor can they have a large memory. If 'F' is the frequency of the Atma and 'f' is the highest frequency of perceptible patterns, then the bandwidth of the channel of the Puruṣa is '2f' going from 'F-f' to 'F+f'. Human beings have the largest bandwidth covering usually upto Buddhic plane, that is, about 10^{18} Hz. The human being is, therefore, the most intelligent of all living creatures.

Amongst human beings also there are wide variations. Each individual has his or her own bandwidth. It varies with person to person and also varies with time, that is, expands for the same person with age, education and maturity. As an infant, the human child has a very small bandwidth. It is able to perceive only the sensations of the body. Gradually it starts perceiving the sights and sounds and feelings of touch and taste it receives from sense organs. Soon it builds up emotions and starts showing signs of being happy or angry. Memory starts building at this stage. Intellectual concepts come much later. All of us are able to function smoothly in the physical and astral planes. But in the lower mental plane the capacity to store memory differs from individual to individual. In the higher mental plane the capacity for understanding and logical reasoning is usualy quite restricted. Few of us are able to function effectively in the plane of wisdom and take intellectual decisions based on scientific logic. Most people take decisions on the basis of sentiments and personal likes and dislikes. Finally only once in a while a human saint is able to reach the Atmic plane by actually expanding the bandwidth (Self-realisation); the others only receive signals from this plane and interpret them in terms of their component vibrations of the lower planes.

Due to the wide difference in the bandwidths of individual Atmas, the human beigns are able to look at one another in different ways, that is, with awe and respect, with equality or with patronage or contempt. The person with a wider bandwidth is able to perceive more in the same situation than one with a lesser bandwidth. When we laugh at one another, make fun or cut jokes, it is the difference in the scope of individual perception which comes into play. It is only the humans

who can laugh at one another, not animals, for most animals have the same bandwidth for the same species.

Due to the large bandwidth involved, it is quite possible that two humns beings, tuned to adjecent Atmic frequencies, have a partial overlap in their bandwidths. In such a case the two will have common perception in some areas of their activity. Adjecent Atmic vibrtions may be picked up by identical twins as both embryos tend to pick up their Atmas at about the same time under identical conditions. If there is an overlap, the twins will display telepathic communication and in extreme cases, if one is hurt, the other may also experience pain. Embryos pick up an Atmic vibrations during the course of their development in the womb of the mother. In the case of human beings it is after a few weeks of conception. Immediately after conception, the fertilized cell starts multiplying into more and more identical cells. At some stage this lump of cells picks up an Atma and starts resonting to its patterns. The embryo now grows in a set order, forming bones, flesh, blood, hair etc. From now on it is independent living being quite distinct from its mother.

From which part of the spectrum will a growing embryo pick up an Atma? That will depend upon its class that is, human, animal etc. It will also depend upon the place and time of its conception or birth; to be more exact, the time at which it is ripe to tune to the Atmic vibration. Children born in close communities have their Atmas located close to one another. Their bandwidths overlap. That is why they show common traits. There is not much scope for the expansion of individual bandwidths. The mental growth is correspondigly restricted. Cross breeding from more widely different communities produce more adjustable and more fertile minds. Of course, the bandwidth can be increased by effort (education and experience). It can artificially be increased by certain practices of detachment and meditation. We shall examine these practices in the next chapter.

THE GODLY SELF:

Above the Atmic plane there are two more planes identified in the mythological literature. These are ANUPADIKA and ADI planes. As we cannot perceive these planes they have not been

listed in the planes of our conciousness. However, when we have identified ourselves in the Atmic plane (Self-realisation) we become vaguely aware of the ultimate reality behind the total existence and the position we, as an individual Atma, occupy in this manifestation. The realisation comes when the brain, functioning in the Atmic plane, starts receiving signals from vibrations of still higher frequencies in the cosmic spectrum. These signals give us incomprehensible visions which we see as Gods and Goddesses or hear as Divine voices. The urge then arises to explore this infinite knowledge contained in the spectrum above the point where our Purusa is located. However, tied to the limit of the Atmic vibrations, we cannot know the higher world except receive stray signals from it.

In order to explore the totality of the cosmic spetrum and understand the ultimate reality we must first untie ourselves from The Atmic vibration. The process involves a deleberate attempt to give up our identity or ego and surrender ourselves to the higher Self, that is, the God of our belief. I must bow down to His will. I must regard my self as a puppet in His hands doing His bidding. I possess nothing of my own; I am only a custodian of His property. I have no will of my own; I am simply being guided by the destiny laid down for me by Him. When the mind gets fixed in the spirit of self surrender, the bondage of the Atmic vibration is loosened. The brain gets detuned from the channel of Purusa and becomes transparent to the entire spectrum. We can now float across the spectrum as a point-consciousness scanning and surveying God's total personality with no attachments of our own. Whichever part of the spectrum I focus my attention, that part beomes my personality. I am like a transparent jewel which has no colour of its own but shines in the colour of the light which illuminates it. My personality as a knower becomes one with the object to be known and merges in the totality of abstract knowledge. Patanjali has described this state of the mind as follows:

क्षीणवृत्तेरभिजातस्येव मणेर्ग्रहीतृहणग्राह्येषु
तत्स्थतदञ्जनता समापत्तिः ।

"Kṣina-vrtter abhijatasyeva maṇer grahitr- grāhanagrāhyeṣu
tatstha-tadañjanata sāmapāttih".

Yoga - Sūtra 1-41

(In the case of one whose Citta -Vrittis have been almost annihilated, fusion or entire absorption in one another of the cognizer, congnition and cognized is brought about as in the case of transparent jewel resting on a coloured surface.)

It is difficult to define the identity of Self in this state of mind for the Self really no longer exists; it is merged in the identity of God. The normal aspirations of human mind for its existence in the midst of other minds vanish altogether as the one mind now embodies all minds. We can only define Self in negative terms - what I am not rather than what I am. The experience has been defined in seven steps of realisation: (i) I have no desire for knowledge as I know all that has to be known. (ii) I have no attachments as I have freed myself from all bonds of every description. (iii) I have no need for possessions as I have attained everything. (iv) I have no obligations as I have done the whole of my duty. (v) Since the attributes of Prakriti no longer confront me I have no fear, (vi) I have no worry and (vii) I have no doubt. My mind is at rest.

This is the identity of Self in the Anupadika plane.

THE ULTIMATE SELF:

Having freed ourselves of the bondage of the Atma and moving freely in the cosmic spectrum the final realisation that dawns upon us indicates that the entire spectrum of the manifestation can be visualised as a modulation upon a Divine vibration of a much higher frequency. The Divine Self is also a Purusa but with an infinite bandwidth. He embodies all the individual Purusa and the entire prakriti. We are all His children. All our qualities and all our actions are part of Him and His deeds. His Atma, that is the Paramatma is the vibration upon which this entire universe pulsates; manifesting and unmanifesting in quick sucession. What will happen if we tune to His frequency and start perceiving this cosmos as our own personlity. We then become God. The experience is called God-realisation. The cosmos then appears and disappears alternatively as the peaks of this vibration cross the space-time border. The periodicity of this manifestation is the inverse of the frequency of this vibration. It is defined by 'KSANA' the smallest unit of time. The manifested universe is not, after all, a continuous phenomenon but projects in successive pictures much as the show goes on in a cinema hall.

What happens if we peep in between two successive pulses of manifestation. There will be nothing; it will all be a void. That is the ultimate reality. The projection is taking place only because of the space-time limitation. If we can now overcome this limitation and shed our Avidya, we shall see only void. That is Brahman. And we shall see our own Self merge in it. That is the final salvation of the soul. That is our final identity. The ultimate Self is Brahman or void. Void is the ultimate reality the absolute truth.

That is the view of our Self in the Adi plane.

CHAPTER VII

THE PRACTICE OF YOGA

Yoga literally menas a Yoke, a link, or a union. It is the process of uniting two entities together or establisning a link between them. In devotional terms Yoga is the process of establishing a link between the spirit and God; between the individual Jivatma and Paramatma or Isvar. In scientific terms, based upon the theory of vibrations which we have been considering, it means establishing a communication link between the vibration of the Atma and the rest of the Cosmic spectrum. In other words it is establishing communication between the individual consciousnes and the universal consciousness. Since the Atma is itself a vibration of the Cosmic specturm and permanently resides in this spectrum, a link already exists; only communication is missing. We remain unaware of our link with the universal consciousness since this link extends beyond the planes of our individual consciousness. By Yoga we attempt to expand our individual consciousness to reach the universal. Hence Yoga is not so much the process of establishing a link as the process of identifying the upgrading the existing link and bringing it in the field of our consciousness. God is already within us; we have only to polish the mirror of our mind to perceive Him. Since our consciousness is restricted by the bandwidth of the channel of Purusa, the practice of Yoga finally defines the process of expanding this bandwidth till it embodies the entire cosmic spectrum.

EXPANDING THE SCOPE OF CONSCIOUSNESS:

How do we expand the scope of our consciousness? We are aware of the thought process taking place in our mind and the resulting actions that are part of our consciousness. But we are also aware that there are thoughts arising and actions taking place without our conscious efort; even without our knowing them. I may get angry or worried but I cannot consciously control my anger or anxiety. I cannot dictate my dreams nor can I control the ingress of inspirations and origina!

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How do we expand the scope of our consciousness? We are aware of the thought process taking place in our mind and the resulting actions that are part of our consciousness. But we are also aware that there are thoughts arising and actions taking place without our conscious efort; even without our knowing them. I may get angry or worried but I cannot consciously control my anger or anxiety. I cannot dictate my dreams nor can I control the ingress of inspirations and original

ideas. I have some convictions or faith which I cannot explain but all the same I would not go against such convictions or faith even though my consciousness reasoning and judgement is opposed to it. Sometimes I am able to understand the cause of an event and clearly see the process which led to it. But at other times I am unable to explain the happenings and attribute them to the act of God. There is thus a clear limit to my conscious knowledge; a boundry beyond which I cannot trespass.

When the child is born its consciousness is very limited. Its Atma is almost a pure vibration with very little bandwidth. It is able to perceive only in the physical plane and reacts only to the sensations produced by the body or sense organs. It howls when hungry and passes urine when ever the pressure builds up. Gradually, in a few months, the bandwidth expands to cover the astral plane and the child starts displaying emotions. It shows pleasure when it sees mother, is angry if she does not feed milk; it displays fear to see a new face, and so on. As the bandwidth expands further, the child enters into the mental plane. It starts building a memory and identifies objects with reference to its memory. Then it builds up cause and effect equations and connects events and anticipates them. It starts understanding spoken words and repeats them, first by memory, and then by understanding and reasoning. The bandwidth now fully covers mental plane, both lower and higher bands. In the next few years the growing child fills more and more data in the memory field. With maturity the bandwidth expands to cover the Buddhic plane. In a matured adult the consciousness functions in the plane of wisdom which provides a wide space in the bandwidth to store experiences and apply them to decision making. The bandwidth is now touching the lower Atmic plane but rarely ever expands beyond this point.

Throughout life we continue to function on the basis of sensory inputs, emotions, reason and experience. We do not need anyting more so we do not make any effort to increase the land width any further. Occasionally we get signals from higher planes of consciousness: inspirations, original ideas, convictions and glimpses of faith and religion. We simply accept or reject such signals without trying to understand them or trace their source. When we are in trouble we pray and somehow the mind becomes peaceful and we are back

to our limited range of consciousness. Thus we rarely ever make an attempt to expand our consciouness beyond the plane of Wisdom to peep into higher planes of Atma. This is quite normal and life goes on merrily. However, the human urge for more knowledge, particularly of the mystic and the super natural is insatiable. We must attempt to understand and explain the Divine phenomena of life and death which we had so far left on destiny or the will of God. But we cannot do so because the controlling signals come from a part of the cosmic spectrum which lies beyond the bandwidth of our consciousness. Hence the need to expand the bandwidth still further.

How do we go about it? Upto the lower mental plane the expansion of the bandwidth is automatic. Education moves us to the higher mental plane. Later, on experiences and the need to use past experiences for future action, expands the bandwidth to cover the plane of wsidom. Thus we easily reach upto the verge of lower Atmic plane. Here we can receive communication from outer spectrum but without consciously understanding it. If we could expand the bandwidth slightly more, we could understand many of the divine phenomena which control our life and destiny. Not only that, once we could understand and explain the mechanism of these happenings we could devise means to control them too. We could then acquire super-natural powers to control our life and our body. Such super-natural powers are known as Siddhis. They can be, and have been acquired by the practice of Yoga.

SUPPRESSION OF MENTAL RESONANCE:

The Yogic method of artificially expanding the bandwidth of our consciousness is quite simple: suppress mental resonance of the lower plane and the brain will automatically switch to the next higher plane of consciusness. Patanjali starts the Yoga-Sutra with the following definition of Yoga:

योगाचित्तवृत्तिनिरोधः ।

"Yogas citta-vrtti-nirodhan".

Yoga - Sutra 1-2

(Yoga is the inhibition of the modifications of the mind.)

The modifications of the mind refer to the continuously chang-

ing patterns of vibrations being generated in the brain due to thought process. Patterns are formed at different frequencies representing objects of attention or 'Pratayas' in the different planes of our consciousness. If we suppress the low frequency patterns the brain automatically tunes to the next higher frequency pattern. Conversely, if the brain tunes to a high frequency pattern, it automatically drops the lower frequency patterns. Thus when we are concentrating upon abstract concepts of the mental plane, the physical picture produced by sense organs temporarily vanishes from the mind. When functioning at higher frequencies the brain uses larger bandwidth and handles more complex vibration patterns. By successive suppression of the patterns of low frequency and picking up patterns of higher frequencies the bandwidth can be expanded gradually to any limits. Practical Yoga outlines the principles by which vibrations at different frequency levels can be suppressed.

The low frequency patterns are generated by vibrations received from three different sources. These are:

(i) Nerve impulses received from sense organs and other parts of the body (Sense perception).

(ii) Self-sustained vibrations developing in the cavities of the brain (Feelings and emotions).

(iii) Vibrations recovered by the brain by demodulation of higher frequency memory patterns (Thoughts and dreams).

The three sources refer respectively to our sensations, feelings and thoughts produced by current memories. We can suppress the sensations by closing our eyes, sitting in a silent place free from odours and other disturbances, and keeping the mouth clean and shut. The sensations and urges of the body can be suppressed by having a balanced diet, keeping the body fit and healthy and by sitting in a comfortable posture. As soon as we succeed in suppressing the sensory imputs the mind switches on to the astral plane and gets involved in feelings and emotions. I start worrying about the children's examination. I pick up an imaginary argument with my neighbour and get angry. Without any particuar provocation I become depressed because of lack of promotional avenues in my job. Thus when my brain is not engaged in sensory inputs or motor outputs it gets filled up with

vibrations of the emotional plane. In order to suppress vibrations of the astral plane we have to adopt the Yogic practice of 'Vairag' or detachment. This is rather a difficult process and requires a lot of practice. By persistent effort and practice we can fee our brain of emotional involvements. If we succeed in this practice even for a short time, we shall find that the brain has switched to the higher frequency patterns of the mental plane: abstract memories and mental concepts. As a scientist I may start thinking of the possible explanation of Heisenberg's priciple of uncertainty. Or I may start analysing the effects of sex education upon the minds of children. The brain is now thinking in abstract way without any sensations or emotions.

Upto the mental plane the brain switches smoothly back and forth from lower to higher frequencies. But it is difficult to sustain it in any one plane for a long time. We experience and practice this phenomenon in our day-to-day life. We try to involve a child in an emotional story to divert his attention from the pain he is suffering due to a broken leg. If the child gets fully involved in the emotional part of the story, he actually forgets the pain. The 'prataya' of the sensory plane has been successfully suppressed and replaced by a 'Prataya' of the astral plane. Again when a person is depressed or otherwise involved in grief or worry we try to persuade him to think of higher abstract things, his work or some other intellectual persuit of his interest. This way we attempt to switch his brain from the emotional plane to the higher mental plane. In fact, if a person really gets involved in some intellectual persuit of the mental plane, he gets automatically detached from emotions and even from bodily sensations. He may forget his sorrows and may even forget to take his food despite the biological urge of hunger. However, due to the in-built resonance and self-sustained vibrations in the brain, the mind tends to switch back to the 'Pratayas' of the emotional or lower planes.

The tendency of the brain to slip back from high frequencies to lower resonant frequencies is a natural drawback and poses a serious problem in our attempt to expand the bandwidth of consciousness. The brain has built up so many areas of resonance which sustain vibrations of fixed requencies that it keeps switching back to these vibrations whenever we attempt to raise it to higher frequencies. These

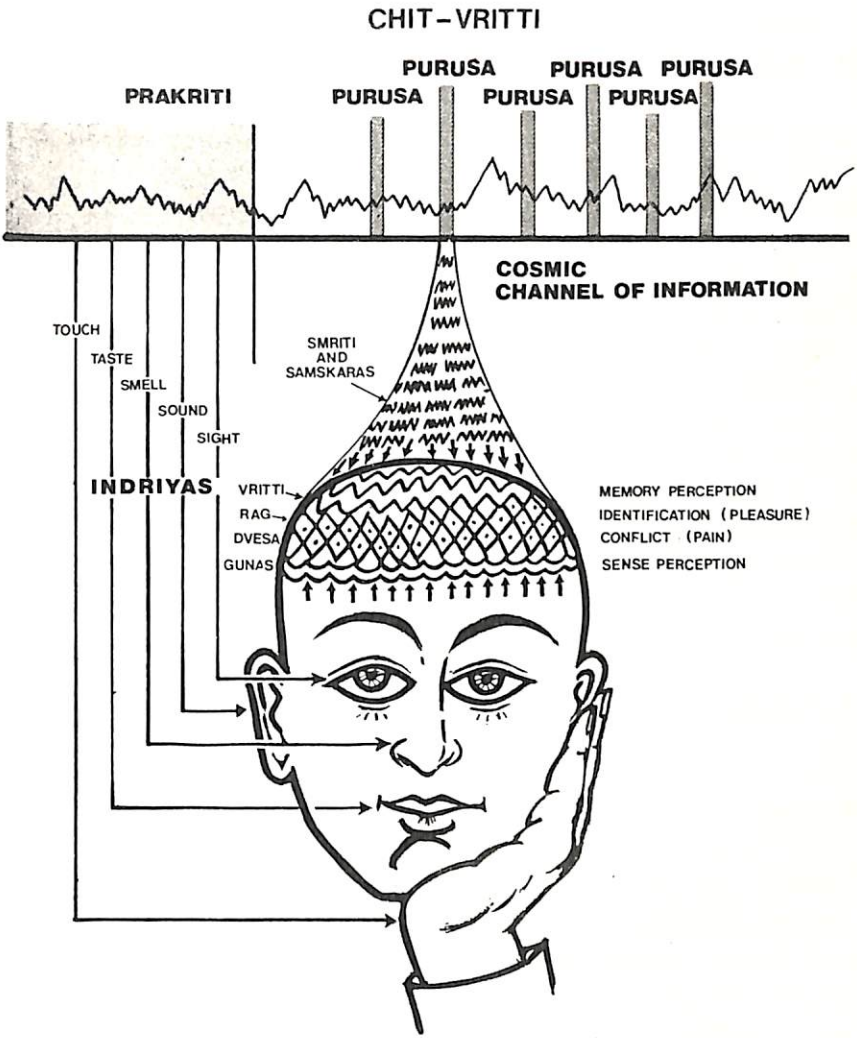
resonant frequencies are the ditches or pitfalls in which we always slip and which prevent us, in the normal way, to move to higher planes. The brain acts like a badly designed loudspeaker which emphasises certain tones to which it is resonant and frequently bursts into a boom whenever the signal carries any frequency to which it is resonant. What we need is a loudspeaker with a flat response which will sympathetically reproduce the speech or music fed to it without producing distortions of its own. The same is needed of our brain. The practice of Yoga tends to make the brain a fully transparent medium which will respond to signals without distortion and without adding signals of its own. There are a number of preparatory steps of Yoga which tend to even out the resonant areas of the brain and make it a perfect responder to the cosmic vibrations.

Patanjali has outlined five preparatory components of Yoga which must be thoroughly mastered before it is possible to sustain the brain in the higher planes of our consciousness. These five components are then followed by three more components which outline the method of moving to the Atmic plane and read the cosmic spectrum beyond the bandwidth of our consciousness.

THE EIGHT FOLD YOGA:

The eight components of Yoga are as follows:

(i)	YAMA: (Self restraint)	- Ahimsa (Non-violence) - Satya (Truthfulness) - Asteya (Honesty) - Brahmacharya (Sexual continence) - Aparigraha (Non-possessiveness)
(ii)	NIYAMA: (Fixed observances)	- Saucha (Mental cleanliness) - Samtosa (Contentment) - Tapah (Austerity) - Svadhyaya (Introspection) - Isvara pranidhanani (Surrender to God)
(iii)	ASANA	- (Yogic postures)
(iv)	PRANAYAMA	- (Breath control)



Cit - Vritti

Cit-Vritti is the interaction of vibrations in the brain which produces perception, thoughts, identification, pleasure and pain. Two set of vibrations are involved: one set comes directly from the cosmic spectrum through the channel of Purusa, i.e. from the Atma; the other set, also from the cosmic spectrum, comes from the domain of Prakirit through our sense organs. The first set produces thoughts based upon memory and Samskaras; the second set produces images of sights, sounds etc. When the two sets of vibrations meet, they regenerate or attenuate one another producing feelings of identification, conflict, pleasure or pain.

(v) PRATYAHARA - (Mental abstraction)
(vi) DHARANA - (Mental contemplation)
(vii) DHAYANA - (Mental concentration)
(viii) SAMADHI - (Mental trance)

The first two components have five sub-components each. These sub-components are the basic practices of self discipline which prepare the mind for the process of controlled tuning. The other components then lead the way to higher planes till we reach the Atmic plane. Each of the components then have variations which are practiced under different titles for specific results. Yoga can be performed in different planes of our consciousness for perfecting the functions of the body and mind without necessarily expanding the bandwidth of consciousness. Some of the common practices of Yoga are Hat-Yoga, Karma-Yoga, Bhakti-Yoga, Jnana Yoga, Chakra Yoga, Yogic healing, Awakening Kundalini, etc. The ultimate aim of all the different practices is to build up effective communication with the cosmic spectrum so that knowledge can be obtained directly from wherever it is available and desired results can be obtained by will power rather than by action in the physical plane.

RAJ YOGA:

Raj Yoga is the practice of Yoga which leads the mind to the highest echelons of knowledge without involving it in the gains of any particular level. Unlike other forms of Yoga, Raj Yoga does not attempt to develope the body, cure diseases or produce supernatural mental capabilities such as Siddhis. It is the persuit of pure knowledge of the technique rather than its application for material good. In fact, any application for personal benefit produces areas of resonance in the brain which then become obstacles for further advancement in the search of the ultimate truth or the absolute reality. The Yogi is therefore specifically directed to desist from using his knowledge and capability for exhibition or commercial gain.

It will be noticed that the first two components of Yoga namely Yama and Niyama, along with their sub components, appear to demand unreasonable restrictions in our day to day life and behaviour; restrictions which do not seem to have any relation to the practice of Yoga.

However, we must remember that the basic principle of tuning our brain to higher planes of conciousness is to suppress completely the resonances in the lower planes. Resonant circuits are formed in the brain by the linkages of nerve cells when strong vibrations are generated and sustained for some time. The impressions that we form in the childhood very often set up such circuits with the result that these impressions are recalled again and again and become guiding priciples of our future life. Our likes and dislikes, affections and hatred, developed during specific incidents become an obsession and we cannot seem to get rid of them. The only method to erase such impressions is to develop thoughts exactly opposite to the original impressions. Violence, for example, creates deep impressions both on the mind of the aggressor as also of the victim. Non-violence is, therefore, the first principle of Yama. Non-violence has to be practiced not only in one's actions but also in one's thoughts. Patanjali has elaborated the suppression of violence thus:

वितर्का हिंसादयः कृतकारितानुमोदिता
लोभक्रोधमोहपूर्वका मृदुमध्याधिमात्रा
दुःखाज्ञानानन्तफला इति प्रतिपक्षभावनम्

"Vitārkā hīmsadayah krtā-kārtanumoditā lobhe-krodha-mohā-pūrvākā mrdu-mādhyadhimatra dūhkajnananantāpjālā iti pratipaksa-bhavanam."

Yoga Sūtra II-34

(As improper thoughts, emotions and actions, such as those of violence etc., whether they are done, indulged in, caused to be done, or abetted, whether caused by greed, anger or delusion, whether present in mild, medium or intense degree, results in endless pain and ignorance; so there is the necessity of pondering over the opposites).

Vegetarianism is a direct outcome of this direction. I may not hunt animals myself for eating. But if I buy non-vegetarian foods in the market, somebody has to kill living animals to provide the meat. Thus I abet violence and hence my mind cannot become pure and I cannot reach the higher planes of consciousness. Similarly the practice of the other preparatory steps outlined under Yama and Nyama has to be so deep rooted in the mind that we do not deviate from it even in

our thoughts. Truthfulness, for example, is not merely a matter of good behaviour and dependability in social life. One has to so regulate the thought process that even the concept of departure from truth, ever so slightly, may be for the good of humanity, cannot penetrate the mind.

THE YOGIC VOW:

The practice of Yoga, particularly Raj Yoga, is not very easy. It requires a dedication and commitment which often transcends normal social obligations. The ten sub-components of Yama and Niyama themselves need courage and opportunity to practice which few of us can afford. It would appear comparatively simple for a noble person to be non-violent, truthful and honest. Sexual urge and other acquisitive impulses can also be controlled by will power. Cleanliness, contentment and austerity is practiced by many. Inrospection and surrender to God is a part of most religions. Yet, in Yogic terms, these pactices, carried out in the physical plane for social identification and accpetance, donot meet the need of the situation. The Yogi has to adopt them in the mental plane so that they become a part of his habit and subconscious thinking. He cannot deviate from the guidelines even in his thought process. Once the thoughts are clean, the physical actions are irrelevent even if they appear to violate the norms. Marriage and having children is not an impediment if one does not indulge in sexual intercourse for the sake of pleasure but performs it as a part of duty with no personal involvement whatsoever. Similarly all the guidelines have to be practiced in the higher places of our consciousness at all times, on all occasions, irrespective of the nature or class of an activity, its time, place or circumstances. Patanjali describes the vow thus:

जातिदेशकालसमयानवच्छिन्नाः सार्वभौमा महाव्रतम् ।

"Jāti-deṣā-kala-śamayanavācchinnāh
sārvabhaumā mahā-vrātām."

Yoga-Sūtra II-31

(These, the five vows, not conditioned by class, place, time, or occasion and extending to all stages constitute the Great Vow.)

Once the self-discipline outlined in the practice of Yama and

Niyama is established in the mind, many super natural instincts and powers develop automatically. For example, a person fully established in non-violence will exercise a similar influence on others close to him. He will develop a field around him in which all living beings will tend to shed violence. Animals hostile to one another such as a tiger and a lamb will live in peace in his vicinity. A person bent upon committing a murder will probably give up the idea altogether in the presence of the Yogi.

Similarly a Yogi established in truthfulness will reach a stage when words uttered by him will always come ture. Since he cannot depart form truth, natural events canot also betray him. This may appear fantastic and opposed to scientific logic, but we must remember that events in our midst are nothing but exchange of vibration patterns between our Atmic vibration and the rest of the cosmic spectrum. During exchange the more powerful vibration will overshadow the less powerful one. So if the strength of the pattern on the Atmic vibration is very high, which is the same thing as having a very strong will power, it will always overshadow the events and mould them to its own pattern. Though it is our common experience that a person of strong will overshadowing another person of weak will, we will question a suggestion that a person with sufficient will power can bend a steel knife by merely wishing it to be twisted. However, it is possible and is being done by Yuri Geller, the magician. Scientifically we cannot explain such psycho-kinetic phenomenon but the fact that such phenomena exist and are practiced cannot be denied. In the theory of vibrations there is no difficulty in understanding and explaining such happenings.

The point to realize here is that the ten components listed under Yama and Niyama are not merely to be adopted and practiced casually as and when convenient. One has to absorb them mentally to the extent that departure from the laid down practice becomes infeasible. Only then the path for progress to the higher components of Yoga is cleared. We have to constantly depart from our rigid views of physical existence based upon laws of nautre and think always of our environment, and the objects and events in our vicinity as an interplay of vibrations in which our mind is an active partner. The universe does not exit except as a raction of our mind and can be suitably moulded by our mind if we could only tune our brain to specific

vibrations under the control of our will. And that is what Yoga is all about.

PRACTICAL YOGA:

It would appear from the foregoing discussion that, for ordinary men and women like us, it is not at all possible to practice Raj Yoga since even to comply with the first principles of Yama and Niyama appears next to the impossible. No, it is not so. While it is desirable and would help if we practice Yama and Niyama, perfection in them is not essential before one proceeds to higher components of Yoga. As we practice higher components the shortcomings of lower components would automatically confront us and they can be remedied gradually as needed. In fact one may practice Asanas or Pranayama as independent subjects without reference to Yama and Niyama. One may even start with Dharana and proceed to Samadhi without first practicing Asanas. But the last three components, Dharana, Dhyana and Samadhi always go together. The first five components of Yoga regulate the functioning of the brain in the lower planes of consciousness upto the plane of wisdom. The last three components then lead to the Atmic plane and beyond. Since the brain tunes easily between the physical and mental planes with ordinary will power, it is possible to start the practice of Samadhi without any initial preparation. The modern practice of Transcendental Meditation (TM) is an example.

YOGA-ASANAS:

We are all familiar with Yoga-asanas and many of us practice them in one form or another. For many of us Yoga means the practice of asanas. However, Yoga-asana is one of the branches of Hat-Yoga which deals with the physical fitness of the body and mind. Asana is the practice of sitting silently in a particular posture of the body. The different postures prescribed are designed to exercise the various limbs and organs of the body. The body becomes flexible, healthy and fit. The digestive system is cleaned up, blood circulation and respiratory functions are tuned for optimum efficiency. Even the mind is refreshed and the brain becomes fit for higher learning.

Apart from exercising the muscles of the body, Yoga-asanas

facilitate the communication of vibrations between the mind and the cosmic spectrum or between the Jivatma and Paramatma. That is why these are regarded as part of Yoga. Our brain receives vibrations from the cosmic spectrum through various limbs of the body which act as antennas. These are the eyes, forehead, finger tips, lips, palms etc. In general the non-hairy parts of the body act as receptors and transmitters of cosmic vibrations. When two or more receptors or transmitters are joined together, the vibrations find closed circulating paths and reinforce one another to regenerate the signal strengh in the brain. The Yogic postures provide different combinations for such regeneration. Apart from self regeneration, the antennas also transmit cosmic vibrations from one person to another. When I place my palm on the head of a youngster in a posture of blessing I am transmitting my feeiings of good will to him. Similarly handshake is a sign of exchange of goodwill. It actually exchanges patterns of the emotional plane. An embrace or a kiss is a similar gesture which atually exchanges emotions. If I join my palms together, in a posture of 'Namaskaram' and bend my forehead down, I am preventing my vibrations from reaching the other person thus suggesting humbly that I am surrendering my personality and will power to the other person and not trying to influence him. Contrarily when the other person lifts his hand and shows me his palm in a gesture of blessing he is accepting my greetings and extending his own. Touching the finger tips with the forehead in salutation has the same significance. Waving palms from a distance indicates that we are still in mental communication though physically remote.

The different postures of greetings are universal to mankind and animals alike. They represent our natural instincts to align the transmission and reception of cosmic vibrations. Yogic postures are a scientific extention of the scheme to provide regeneration, filteration and communication of the vibrations through regulated paths. Yogic healing or nature cure is a still more specialised application of the directive principles which govern the flow of cosmic vibrations.

YOGIC HEALING:

In order to understand the process of Yogic healing or nature-cure we must visualise our body as consisting of a large number of individual cells each acting as a unit of life with a mind of its own.

All these cells are tuned to the same Atmic vibration and hence receive commands from a common pattern which modulates this vibration. The body acts as one unit because of an integrated pattern built upon the Jivatma. This pattern is known as the Astral body which looks like the physical body but has no material inside it. During pregnency, the fertilised cells multiply in the womb of the mother. Once the embryo has tuned to a particular Atma the cells arrange themselves to fill the Astral body. Further growth of the embryo is then controlled by the patterns of the Astral body. Yet the cells remain individual units of life which function in unision due to the patterns contained in the Astral body. In this respect our physical body is like a swarm of bees which move about in formation as one solid object.

Diseases and disorders arise in the body when the individual cells fail to function in a coordinated manner. It is not the disease or death of individual cells that causes disorders in our body but the lack of direction or misdirection of individual cells which prevents their coordinated working. Individual cells have a shorter life span than the life of the body. Many cells die every day and an equal number of cells are born. The new cells again align themselves with the astral body and function according to the pattern which governs their group. Sometimes this coordination fails. Then disease or disorder sets in. It may be due to a distorsion in the Astral pattern itself or under nourishment, over nourishment or due to foreign cells coming in their way obstructing their normal function. Distorsion in the Astral body may be due to mental tension or some strong specific deficiencies or excesses of salts etc. This may again be due to some other cells meant to regulate the generation of salts etc. not functionig properly. Again, when foreign cells enter the body, they do not follow the set pattern as they are not tuned to the Atmic vibration. Then they create obstacles in the normal function. There are special cells which attack and kill foreign cells or eat them away. These are called the anti-bodies. These are controlled by patterns of the Astral body. Thus most of the diseases and disorders of our body are caused by distorted patterns of our Astral body.

Yogic healing is the art of focussing our attention upon the Astral body and removing its distorsions. The patient is first made to follow the ten vows of Yama and Niyama. When the mind becomes clear

of the resonant pits and is in a receptive state, the patient is asked to think about the normal health of his body and not of the disease. A child is asked to repeat "I am well, my fever is gone". Gradually the healthy patterns generated by the brain replace the distorted patterns of the Astral body. As this happens, the body restores its normal functions and the diesease is cured. Deficiencies, if any, are made good by regulating the diet rather than by external injections or medication.

In the practice of modern medicine we fail to recognize that the human body consists of individual living cells. We treat the body as mass of chemicals and try to diagnose every disease as a departure from the normal chemical state. We then try to restore the normal chemical composition by medicines which will produce the desired chemical change or fill up any chemical deficiency. While this may help to some extent, the cells may still not get motivated to work in the normal fashion and the disease or disorder may continue or develop again. The psychological environment and the will of the patient to get well plays an important part in his cure. The amount of interest a doctor takes in his patient is directly proportional to the speed of recovery. When the doctor goes into the patient's history and builds a picture of the patient's emotional outlook, he is building a picture of the patient's Astral body in his mind. He can then see the distorsions and can attempt to remove them by his own will power, by suggestion or by prescription of medicines he think will help. The cure then takes place partly by medicines but mostly by the joint will of the doctor and the patient. A family doctor is more effective. When the doctor touches the patient with his hands at the forehead or at other parts of the body, he is sub-concsiously exchanging vital Astral virbations between himself and the patient. This way he is removing the distorsions in the Astral body of the patient and the process of healing is already taking place.

Our ancient science of medicine known as Ayurveda depends entirely upon the method of Yogic healing. So is the Unani system of medicine known as Hikmat. The Vaid or Hakim simply feels the nerve of the patient and diagnoses the disease completely. He does not need any pathological investigations or X-ray. By getting to know the bakcground history of the patient and feeling his pulse the doctor has made a fairly accurate picture of he patient's Astral body in his

mind and has spotted the distortions, if any of the Astral body. He is now able to prescribe an effective medicine which is usually a herb or a natural food known to cure the diagnosed disease.

The practice of Homeopathy also follows a similar pattern. In this case the doctor goes into very great details of the symptoms of the patient, both physical and mental. He ascertains the colour of the cough vomitted, the exact time when the pain was felt or the type of dreams the patient has during sleep or the nature of things the patients afraid of. Such information appears quite irrelevent from the point of view of modern medicine, but is helpful in the Yogic method of healing since it builds up an emotional link between the doctor and the patient and thereby helps the doctor to peep into the Astral body of the patient and diagnose the distortion accurately. The chemicals used as medicines are those which actually cause the diagnosed disease or distorsion in the Astral body. If this medicine is given in dilutee doses it does not aggrevate the disease but focusses the attention of the patient to the distorted pattern so the patient starts to remove the distorsion by his mental will. This stimulates the production of anti bodies which overpower the non-conformist cells and drive them away. It results in some kind of eruption on the skin but finally the disease is cured, very often parmanently. In this case the more dilute the medicine, the greater is the chance that the patient's attention is focussed upon the right distortion and the speedier is the recovery. The effectiveness of homeopathic medicines is direclty proportional to the degree of dilution of the chemical used. However, these medicines taken without the detailed consultation with the doctor may not prove effective unless the patient himself has faith in the system and applies his mind to the right spot on his Astral body.

PRANAYAMA:

The Yogic practice of Pranayama is the art of regulating breath; its inflow, outflow and the duration it is held in any position. Why breathing is associated with Yoga is not because it exercises the lungs but because it provides a channel of communication between our bodies and the cosmic spectrum. When we breath in, the antennas of the body act as receivers and cosmic vibrations flow into the body;

when we breath out, the antennas act as transmitters and vibrations flow out of the body. When we hold the breath, the vibrations circulate inside the body and regenerate to produce more energy. By regulating the rate of breathing in breathing out and the duration of holding the breath, in a prescribed selective manner, we can receive and regenerate selective vibration patterns from the cosmic spectrum. This way we can build up any amount of energy. The energy so built up is known as 'Kundalini'.

Suppose I want to lift a heavy weight. Instinctively I will close my eyes, take a deep breath, hold the breath and then start lifting. These are natural instincts but they display the practice of pranayama. Closing the eyes clears the brain from sensory inputs and makes it free to receive other cosmic patterns. Breathing in, particularly with palms open, lets free cosmic vibration enter the body through the palms. Holding the breath allows free circulation of vibrations during which they regenerate to concentrate energy. In a moment the energy is built up and I am ready to lift the heavy weight. Similarly if I want to transfer my own vitality to someone else, I would put my palm upon him and blow out breath. When a small child hurts his hand and comes to mother crying, the mother instinctively presses the hurt hand with her palm and blows over it saying, 'It is OK now'. The child not only stops crying but the pain is also healed. The mother has transferred part of her vitality to invigorate the ailing child. More advanced uses of this techique cure headaches, toothaches or even scorpion bite. The faith healer places his palm on the affected area, builds a specific pattern of vibrations by whispering a specified 'Mantra' and then blows out. In a few attempts the pain is actually gone! There are many variations known as 'Mudras' of joining palms and fingers to produce specific results. In a very general way, if we are tired and exhauted, feeling lack of energy, a simple method of regaining vitality is to stretch the pams and take a long deep breath inwards through the nose. Hold for a moment and join finger tips of both hands to one another; thumb to thumb, little finger to little finger. Spread the fingers apart to form distinct closed circuits for cosmic vibrations to flow from hand to hand and thus circulate locally. Now breath out through the mouth slowly. Again breath in with palms stretched and breath out with fingers touching. Repeat the exercise for ten minutes and lo! the vitality is back to normal.

The Yoga of Pranayama is used by many magicians to display

supernatural powers. By successive ingress and regeneration of cosmic vibrations one can build up enough energy to stop a motor vehicle from moving against several horse-powers of engine pull. Or one could allow the wheel of a heavy vehicle to pass over one's body without getting hurt. These are feats which are frequently displayed by Yogis in India. More dramatic displays involve moving things under the direction of the palm like playing radio controlled toys; lifting a body and letting it remain suspended in air. such feats can be accomplished by the regulated use of the force of cosmic vibrations. The famous rope trick of India is another example.

COSMIC COMMUNICATION:

The four components of Yoga—Yama, Niyama, Asana and Pranayama prepare the body and mind to establish communication with the cosmic spectrum. The remaining four—Pratyahara, Dharana, Dhyana and Samadhi then describe the actual method of communication including the transformation of the mind necessary to understand the cosmic signals. Yama and Niyama remove the mental barriers which prevent the free flow of cosmic vibrations. These barriers are in the shape of resonant pits in which the brain gets locked up in the thought process preventing ingress of any other vibrations. The five resonant blocks, particularly pointed out in our ancient mythology are Kama (sexual urge), Krodha (anger), Lobha (greed), Moha (attachment) and Ahankar (pride). So long as the mind is not free from these five mental blocks it is difficult to establish any meaningful communication with the cosmic spectrum. The practice of Yama and Niyama help in removing these barriers. Then the practice of Asana makes the body fit and flexible, free from disease and disorder. The mind is released from the various urges and pains of the body and becomes receptive to the signals of the cosmic spectrum. Finally Pranayama provides the means of physical communication by allowing the free flow of cosmic vibrations in and out of the body.

Once we are able to exchange information with the universal consciousness, we must prepare our mind to understand such communication. For this purpose the bandwidth of our Jivatma must expand as most of the signals belong to frequencies far beyond the range of our intellect and would normally be incomprehensible to

us. The process of expanding the bandwidth is the same as practiced by a child when he is learning new things. In the process of learning, the child is expanding his bandwidth from the sensory and emotional planes to the planes of intellect and wisdom. from the sensory knowledge of objects and things he stretches his imagination to understand the abstract principles of their behaviour. A ball thrown will always drop to the ground. Touching the hot kettle will burn the finger. And later that heat flows from a body at high temperature to one at a lower temperature. Still further, that a satellite will remain in the geo stationary orbit so long as the centipital force of graivty is exactly balanced by the centrifugal force developed by the speed of its rotation. And so on. The same principle of abstraction is defined in the practice of Pratyahara.

PRATYAHARA:

Pratyahara is the stage by stage education of the mind beyond the point generally covered at the university level of education. Upto the university level we only learn how things happen and how people behave in the way they do. Pratyahara prompts us to stretch the imagination further to find why things happen and why people behave in the manner they do. In the practice of Pratyahara we have to move further and further away from our sense inputs and search for fundamental principles upon which the sense observations are based. As a sense object let us consider a gold necklace. It has a beautiful pattern. Another silver necklace with gold plating has stones embedded and looks more prettier. To a layman, going by the sense of sight, the silver necklace is much superior. But to a goldsmith the solid gold necklace is far more valuable. The goldsmith has gone into one stage of abstraction and values jewellery, not by its looks, but by its weight in gold. From appearance we go to substance. Take one step further. The scientist looks at gold, silver and stones, as substances all made up of chemical elements defining different combinations of electrons, protons and neutrons. All substances are made up only of fundamental particles. This is a high degree of abstraction which many of us are not able to achieve. At this stage of abstraction the sensory inputs become irrelevant. What is the next stage of abstraction? Fundamental particles are packets of energy built up by different fields of electro-magnetism, the weak and the strong field of interaction at close range.

Can there be a unified field which explains all the four fields? That is the question Science is tackling today. If we succeed in establishing a unified field we would have crossed the fourth stage of abstraction. That would be the penultimate stage. The final stage of abstraction would be to determine the cosmic patterns which makes physical existence possible and defines its details. It is this pattern which operates the universe and the mind of man in this universe. This pattern is Aum or God.

Patanjali has outlined five stages of the development of material existence as follows:

स्थूलस्वरुपसूक्ष्मान्वयार्थवत्त्वसंयमाद्भूत जयः ।

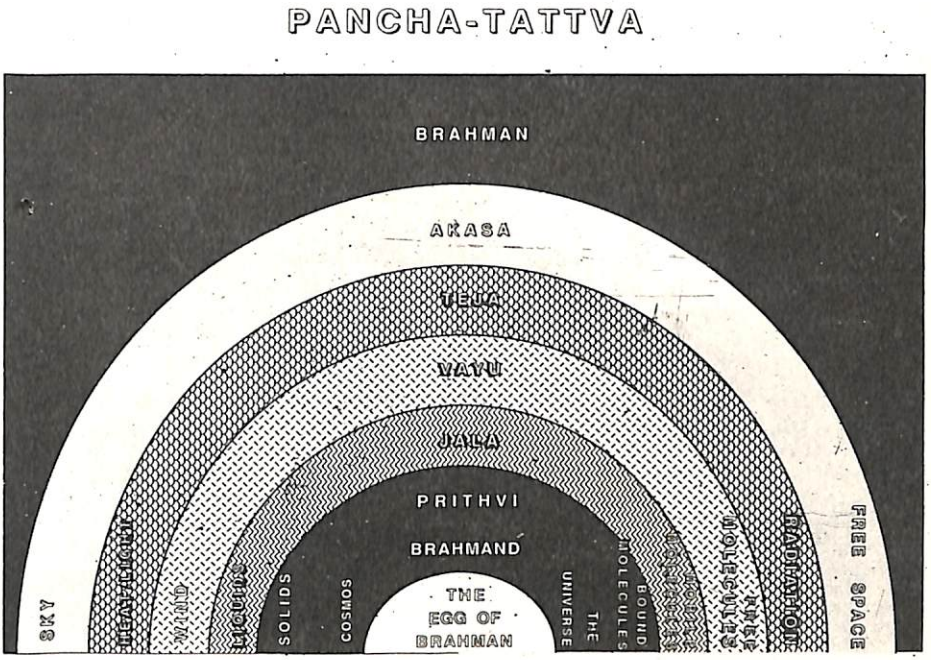
"Sthūla-svārupā-sūksmanvāyarthavattva-
sāmyamād-bhūta-jāyah."

Yoga - Sūtra III- 45

(Mastery over the Pancha-Bhutas by performing samyama on their gross, constant, subtle, all pervading and functional states).

According to our ancient mythology the material universe consists of five elements namely: (i) Akasa (free space), (ii) Teja (radiation), (iii) air (free molecular state), (iv) Water (loosely bound molecular state) and (v) Earth (rigidly bound molecular state). The five elements are called Panch-Bhutas. They represent, in the reverse order, the degrees of abstraction needed to understand the reality behind the material universe. A similar five stage formula is applicable to life-forms. In this case the gross form is the physical body with its sense-organs. The next stage is the Astral body defining the nature and mental personality. The third stage is the ego (Asmita) or the individuality of a living being. Further stages lead to the identity of Purusas as bands of vibrations in a continuous cosmic spectrum and finally the spectrum itself which is the same thing as Aum or God.

As we move to the higher orders of abstraction the brain becomes more receptive to the cosmic vibrations in general rather than confining itself to the band of the Jivatma. The bandwidth expands



Panch -- Tatva

Brahmand, the egg of Brahman, manifests from void due to space time limitation. Under space-time symmetry it takes the form of superimposed vibrations with Tamas,Rajas and Sattva as its attributes. The Tamsic particles then move under Rajasic forces to provide free molecules of gases, mobile molecules of fluids and rigidly bound molecules of solids. The Satvic attribute remains as the radiation filling all space. Thus the five elements of manifestation - Pancha Bhutas- are established: (i) Akasa or free space (ii) Teja or radiation of heat-light, (iii) Vayu or gaseous form of matter, (iv) Jala or liquid form of matter and (v) Prithvi or solid form of matter.

and we are in communication with the spectrum direclty without the need of our sense organs. How to regulate this massive flow of information and understand the messages lying beyond the limit of intellect is the subject of meditation which we shall study in the next chapter.

CHAPTER VIII

MEDITATION

Meditation is the art of sitting with the mind focussed upon a Divine Being. In a religious sense meditation implies a silent prayer where God is the focus of our attention. Since God is an abstract entity, meditation is performed by repeating the name of some deity in whom we have faith or concentrating our attention upon the image of a Devi or Devata (A God incarnation). However, if we want only to train our mind to perform meditation, the focus of attention could be any object such as a book, or any abstract thought such as nationalism. It could be a flower, a piece of jwellery or it could be your sweetheart! The idea is to find a hold upon which the mind could rest and not drif away. I once visited the house of a witty friend and found 'MEDITATION' inscribed on a door. Opening the door I found it was toilet seat! With no offence meant to serious meditators, I may say that the inscription was quite apt if the friend used the seat to concentrate his mind on some one subject rather than letting it drift from object to object. So long as the mind is held still, the objective of meditation is achieved.

In strict Yogic terminology, meditation covers the last three components of Yoga defined in Patanjali's Yoga-Sutra. These are the sixth,seventh and eighth components namely Dharana, Dhyana and Samadhi. The practice of these three components establishes a meaningful communication between the individual consciousness and the universal consciousness or between the vibrations of the band of Jivatma and the rest of the cosmic spectrum. Thus meditation is the procedure of building communication between man and God; between Jivatma and Paramatma. That, as we have seen, is the ultimate objective of Raj-Yoga.

TRANSCENDENTAL MEDITATION:

Transcendental Meditation, or TM in short, is the western method of meditation practiced primarily to refresh the mind and to reduce

mental tensions. Originally developed under the guidance of Indian Yogis, the practice of TM has been studied in detail in the west and physiological and psychological effects of TM have been classified. TM is now considered an accepted method of relaxation technique and has been prescribed for persons engaged in arduous and exacting duties such as aircraft pilots. TM is a simplified technique of meditation which does not require very elaborate preparation or self-discipline such as Yama and Niyama. The person desiring to perform TM is assigned an object or word upon which he or she is to concentrate. The asignment is done by a qualified 'Guru' who takes into account the psychological condition of the person to determine which thought or 'prataya' will resonate best in the mind of the individual. The intention is to drive out other thoughts in preferene to the given 'prataya'. As the brain is cleared of random resonant vibrations it is filled with a pure vibration which represents the 'Prataya'. A mono chromatic vibration of this nature acts like a laser beam and increases the mental activity considerably. In the end this 'Prataya' is also dropped and the mind becomes blank. The brain becomes free of all vibrations and , in this state, is extremely sensitive and most receptive to faint signals of the cosmic spectrum.

The effect of TM is immediate relaxation and refreshment of the mind. Ten minutes of TM is equal to eight hours of sound sleep. Regular practice of TM reduces mental tensions, improves the condition of the heart and blood pressure. Insomnia and alcoholic habits including smoking are cured. Mental reactions and comprehension is improved leading to better intelligence and personality. Apart from personal health TM produces improvements in one's environment. Social productivity and happiness increases, crime decreases and even the rate of accidents come down. It is estimated that if 1% of the population of any town regularly performs TM the town will become distinctly more prosperous.

These are some of the results of TM which have been verified by medical checks and demographic surveys. The fact that TM produces noticeable results is fully accepted even by the western world. Why such results are achieved by TM cannot be understood by a purely scientific and materialistic approach. The Yogic theory of our ancient wisdom explains not only the effects of TM but also many other more advanced 'Siddhis' which can be obtained through meditation performd in the prescribed Yogic manner.

SAMADHI:

Samadhi is the culmination of the process of meditation. It is the state of trance in which we lose the sense of our body as self and see objects only in their true spirit. Samadhi frees us from the bonds of materialistic existence and opens the doors of ultimate reality. Patanjali has described Samadhi as consisting of two parts namely Samadhi with a seed and Samadhi without a seed. These two parts are the two stages of meditation.The first stage is when the mind concentrates upon only one object and discards all other thoughts; the second stage is when even this one object is discarded and the mind becomes a blank. The first Samadhi is called Samprajnata Samadhi or Samadhi with a Prataya; the second one is called Asamprajnata Samadhi or Samadhi without a Pratya. The two definitions are as follows:

वितर्कविचारानन्दास्मितानुगमात्संप्रज्ञातः ।
विरामप्रत्ययाभ्यासपूर्वः संस्कारशेषोऽन्यः ।

"Vitārkā vicāranāndāsmitānugamāt Sāmprājñātaḥ."
"Viramā-prātyāyābhyasā-pūrvah samskaraseso'nyah."

Yoga Sūtra I-17,18

(Samprajnata Samadhi is that which is accompanied by reasoning, reflection, bliss and sense of pure being).

(The remanent impression left in the mind on dropping of the Prataya after previous practice is the other.)

BHAKTI YOGA:

The Yogic method of Samadhi requires considerable deliberation and reasoning to determine which thought is relevant and what is to be discarded. As the span of activity of the brain is reduced by discarding one thought after another (Neti-Neti) the brain gradually builds up only one frequency of vibration to which the whole system then resonates. This gives a sensation of immence inner pleasure described as bliss of enlightenment or 'Ananda' of Samadhi. Finally when the vibration reduces to the basic carrier frequency, that is, the Atma, the only identity is that of the ego or 'Asmita'. So long as this identity is

maintaind the Samadhi is Samprajnata and has a definite 'prataya' as its seed. If we now drop the Prataya, the brain switches over to the Asamprajnata state of Samadhi in which the mind is free to communicate with the cosmic spectrum without any restriction or bias.

The Yogic method of meditation requires a great deal of preparation and practice before the mind can be sufficiently trained to give up one pattern after another retaining only the essence or the pure carrier vibration. There is an alternative method by which one can attain the same objective. This is the method of devotion and faith. It is called Bhakti Yoga. In this method one regenerates a particular vibration so much that all the other vibrations become comparatively insignificant and thus fade away. This regeneration is not done by will and determnation. On the contrary the will and ego are completely surrendered to God. The technique is described as 'Isvara pranidhanan'. In simple words it is a process of building up faith and devotion to one's image of God, so much so that one's own identity is completely lost. The result is that the brain is filled with only one vibration to the exclusion of all others. This is the same thing as Samadhi with a seed. Theoretically God or Isvar is a pure vibration which has no modulation and hence no bandwidth. It is a Purusa which has no Samskaras and hence no resonant modes. The vibration of Isvara has no specific frequency and could be placed anywhere in the spectrum. It is only a concept. It is not bound by space or time. Therefore it defines the whole of the spectrum. Hence it is designated by 'Aum' which means the totality of existence. When one devotedly repeats 'Aum', 'Ram' or any other name by which one recognizes the existence of God, a pure vibration starts building up in the brain. As the amplitude of this vibration increases, the other vibrations are driven away. Ultimately Samadhi is attained. This practice is known as 'Japa'.

Depending upon the frame of mind and the specific bands of vibrations to which the brain tunes easily, one may adopt the 'Vitarka' (deliberation), 'Vichara' (deep thinking) or the 'Bhakti' (devotion) Yoga for the practice of meditation. The result is always the same: attainment of Samadhi. We, in India, are emotional people. Our brain functions better by regeneration of resonant vibrations in the Astral plane rather than by reasoning and deliberation in the mental plane. Bhakti Yoga is, therefore, more suitable for us than Jnana Yoga.

Most of the Indian 'Gurus' who have themselves acquired Self-realisation through the step-by-step method of Yogic meditation, preach only the path of devotion and conduct exercises through 'keertans' that is, chanting of hymns. In community singing the brain gets tuned to one Prataya, the image of God, to the exclusion of all the other thoughts. This is a simple method but somewhat slippery. For if the Guru is a fraud the entire effort becomes fruitless and leads to frustration. Jnana Yoga, on the other hand, is slow and tedious, but sure. The progress once made is lasting.

The people of the west are less emotional and more logical. Their brains tune better in the planes of intellect and wisdom. The same self-realised Indian Gurus, therefore, teach a different teachnique when they visit west. Trancendental Meditation is one such technique. Even the obscure philosophy of our ancient wisdom, described in Gita, the Upanishads or the Yoga-Sutras is understood and appreciated more in the West. By the theory of vibrations, which I have been using, it may be possible for the scientific minded persons to understand and appreciate the depth of our ancient wisdom .

SAMYAMA:

Let us now consider the last three components of Yoga namely Dharana, Dhyana and Samadhi. The practice of these three components, when performed together, is known as Samyama. Samyama is the state of mind of a Yogi who is in direct communication with the cosmic spectrum. His brain has been temporarily freed from the bond of his own Jivatma and is now able to pick up any vibration patterns from any part of the spectrum. The Yogi is therefore able to see any event, irrespective of the limitation of space and time, acquire any knowledge or perform any physical feat by rearranging the patterns in any part of the spectrum. However, merely by tuning the brain to receive different patterns does not enable one to understand them, much less to rearrange or reorganise them. The practice of Samyama must therefore be preceded by the practice of a number of transformations of the brain to develop relationships between the known patterns and the new ones the Yogi encounters in the cosmos.

Dharana literally means the act of concentrating the mind upon

one specific subject. The area of active coverage of the mind has to be gradually reduced till it covers only one object. Normally the mind wavers from one subject to another. It is very difficult to control it. It keeps returning to our favourite thoughts. Even if a favourite object is taken as the object of meditation, the mind soon gets bored and drifts to another object. However, with the sustained practice of the first five components of Yoga it is expected that the meditater has developed enough will power to control and retain his mind. Thus confining the area of activity of the mind is Dharana, the first part of meditation.

Dhyana means abstract medition. After the attention has been focussed upon some physical object by Dharana, the second step is to build up uninterrupted one-pointed attention upon some abstract aspect of the object. Suppose the object of meditation is a flower. There can be many types of flowers. So we must decide upon one of them, say a rose flower. Then there can be many aspects of a rose flower: its colour, shape, smell etc. Let us pick up one of them, say its smell for meditation. Now an uninterrupted attention only upon the smell of the rose flower will define the practice of Dhyana. When such a practice is continued for some time, the mind is prevented from entertaining any other thoughts and gradually only one vibration pattern reverberates in the brain: the pattern depicting the smell of a rose flower. The rest of the brain becomes comparatively free of any vibrations.

As the brain gradually loses the different vibration patterns reverberating in different lobes of the brain, our consciousness of the body and our awareness of the environment gradually fades away. The identity of the Self vanishes and its place is taken by the identity of the object of meditation, in this case the flower. The meditator becomes the smell of the flower. His mind goes into a temporary trance in which he forgets himself and considers himself to be the smell of a flower. He behaves like one. In this state of trance he loses contact with his sense organs. His eyes are either closed or they become blank. He cannot hear anything or taste something or smell something. His body movements, if any, depict the smell and its variations. Such a state of trance is known as Samadhi. It is Samprajnata Samadhi and the Prataya is the object upon which meditation is performed. In this state of Samadhi the Yogi becomes the object of meditation and can acquire all the knowledge about the object from his own thoughts and feelings as he would do for

his own body. He can also exercise all powers upon the object. For example, he can change the strength or the flow of the smell by changing the posture or movement of his own body or by the command of his will-power.

What is the use of going into such a state of trance? One may look stupid and may actually behave like mad. No, the intention is not to remain in this type of a trance but to drop the objet of meditation as soon as one pointed attention has been achieved. Now, if the only thought prevailing in the brain is also dropped, the brain becomes temporarily blank. It is this state of blankness of the brain which is most conducive to receive vibrations directly from the cosmic spectrum and process them without any limitation of bandwidth. The brain now becomes a transparent medium which can receive signals of any frequency from any part of the Spectrum irrespective of the limitations of the Jivatma and irrespective of the resonant pits formed by Samskars and current memories and experiences. To sustain this state of the mind is Samyama. Samyama is the key to super-natural knowledge and super-natural power.

MENTAL TRANSFORMATIONS:

In the state of Asamprajnata Samadhi, when the mind has become completely blank, the brain becomes extremely sensitive and starts picking up vibrations from the cosmic spectrum directly without the need of sense organs. As we have seen, all the objects of our environment are made up only of vibrations. Normally the sense organs pick up selected vibrations to which they are sensitive and form a pattern in the brain. This pattern is stored as a modulation upon the Atmic vibration and becomes a memory or Samskara. When a similar pattern is received again, it is compared with the stored pattern and regeneration takes place. This regeneration gives us a sensation of identification and we recognize the object. We can then recall its name and other associated attributes. A large number of such identifications give us a comprehension of our environment and a placement of our Self amongst the environment. In reality, however, it is only an interplay of vibrations and selective regeneration.

When we go into the state of Samadhi we temporarily desensitise

our sense organs and also, for the time being, lose contact with our own Jivatma which carries the store of our memories. Thus we are neither able to select vibration patterns before we let them into the brain, nor are we able to compare them with any stored patterns for identification. The brain is completely transparent and lets in any and every vibration pattern without any resonance or personal emphasis. How then can we understand the patterns we are receiving and make any sense out of them? In the absence of any other guiding input our brain would just convert the received patterns into motor action and we would behave wildly like mad without any inhibitions. We may laugh or cry; sleep or dance; hug someone and hit another; sing a beautiful song or even speak a language we never learnt before. This type of behaviour is not uncommon and is noticed frequently in persons who, for some reason, have lost touch with their Jivatmas and the brain is picking up arbitrary patterns of vibration. Uncontrolled trance attained through devotional means may also sometimes result in a similar behaviour. What is needed is to keep a control upon the patterns entering the brain throughout the process of meditation and particularly at the time of attaining Samadhi.

In the devotional method of meditation we surrender our will and thereby tend to lose contact with our Jivatma, concentrating only upon the object of meditation. But without the power of the will we cannot control the activity of our brain and hence cannot investigate the vast sea of information in the cosmic spectrum systematically with some degree of reliability. In the Yogic method of step-by-step meditation, on the other hand, the will power is not surrendered but enhanced till the ego-state (asmita) is reached and then the disconnection with the Jivatma is carried out in gradual and controlled manner, reverting back to it for reference as and when needed.

The method outlined by Patanjali for providing a control on the mind during the different stages of Samadhi consists of a series of mental transformation known as 'Parinamas'. The first transformation is known as 'Nirodha Parinama'. In the case of Samprajnata Samadhi, that is, Samadhi with a Prataya, as the brain progressively detunes from the various reverberations taking place in resonant cavities, the consciousness of the body and its environment is gradually lost. In the end only the patterns of the Prataya remain and the consciousness of the

Self is also lost. But once the brain detunes from the Jivatma, all the memory is also lost and there is no way we can identify the patterns of the Prataya in terms of our previous knowledge. Hence strict control is necessary at this point to ensure that the patterns of the Jivatma are tuned in again when needed for comparison and indentification. In fact, as the impressions of the Jivatma are going out and before the cosmic impressions of the Prataya start entering the brain there is a period of Vacuum in the brain when no impression exists at all. If we practice to hold the mind at this null point of the brain, then it is easy to smoothly shift from the impressions of the Jivatma to the cosmic impressions and back. We can then let in the cosmic patterns, go back to the Jivatma, identify the patterns, and then move on to the cosmic pattern again. This smooth flow back and forth produces the necessary dictionary of correspondence in the brain to translate the cosmic patterns in the language of our day-to-day experiences. This method is called Nirodh Parinama.

The impressions which modulate the Jivatma are in the shape of words or names by which we identify objects. However, the essence of these impresions is a vibrations pattern by which we know the object. When this pattern reverberates in the brain we suddenly feel the confidence of familiarity with the object and can recall its name, shape, colour etc. by recovering the associated individual patterns. It is the essential pattern, known as the 'Artha' of the object, which exists as the cosmic pattern. Different persons may call the same object by different names but their essential knowledge is the same. So when we reach the stage in meditaion when only the essential pattern remains in the brain, we have attained Samprajnata Samadhi upon that object. Now if we locate the same pattern amongst the free vibrations of the cosmos we get access to all the knowledge relating to that object. Our worldly knowledge of an object is limited to what we have learnt, about it Through ordinary means such as by seeing smelling, tasting, hearing or reading about it. The essential pattern contained in the Jivatma is therefore, limited to these impressions. But the cosmic pattern is not limited. It contains all the knowledge which relates to the object; perhaps its chemical composition, or other physical attributes we were not aware of. So once we pick up the cosmic pattern and match the two, we get to know the object in its complete detail. This method of acquiring occult knowledge is the objective of Samprajnata Samadhi and hence the process is known as Samadhi Parinama.

The third transformation of the mind is known as Aikagrata Parinam. This is used in the Asamprajnata stage of Samadhi when the mind is completely blank and the brain is sensitive enough to receive cosmic patterns directly. In order to understand the cosmic patterns we must relate them to corresponding patterns of our knowledge stored in our Jivatma. Hence the brain must switch back to the Jivatma and recover matching patterns. When the two patterns exactly balance we have understood the essence of the cosmic pattern. Aikagrata Parinama is the reciprocal of Samadhi Parinama. In Samadhi Parinama we search for a cosmic pattern to match a pattern of our Jivatma; in Aikagrata Parinama we search a pattern in our Jivatma to match a cosmic pattern. In one case we learn a language to read a book; in the other case we read a book to learn so many things.

THE COSMIC JUNGLE:

Understanding the cosmic patterns which enter our brain is not a simple task. With some practice, one may acquire proficiency in attaining Samadhi. One may even learn the various transmormations of the mind to interpret the cosmic patterns in terms of one's knowledge. But even then, to make sense out of the maze of information one receives, is a difficult assignment. I quote from Leadbeater:

> "If the explorer of some unknown tropical forest were asked not only to give a full account of the country through which he has passed, with accurate details of its vegetable and mineral productions, but also to state the genus and species of every one of the myriad insects, birds, beasts, and reptiles which he had seen, he might well shrink appalled at the magnitude of the undertaking. Yet, even this affords no parallel to the embarrassments of the psychic investigator, for in his case matters are further complicated, first by the difficulty of correctly translating from that plane to this the recollection of what he has seen and second by the utter inadequacy of ordinary language to express much of what he has seen".
>
> *C.W. Leadbeater in 'The Astral plane'*

As an example let us try to visualise the cosmic pattern of a book I am holding in my hand. Normally I see only the face of the book and two of its edges. By turning it in my hand I can see the reverse side of the book and the other two edges also. But the cosmic pattern carries both faces and all the four edges. It is the limitation of my eyes and the fact that light travels in straight lines that limits my view to only one side of the book. The total pattern must carry both sides. Now how am I going to interpret a pattern which displays, in one image, both faces and all the four edges of a book? I may understand all the components from my stored knowledge, but to comprehend the totality without the accepted limitations of my sense organs is difficult. This is the problem of many inexperienced Yogis who can reach the stage of occult vision but are unable to interpret correctly what they see.

To complicate matters further it is not only the visible objects which form a pattern in the cosmic spectrum but also all others which do not directly affect our sense organs. For example the book carries not only its visible shape as a pattern but also its image as would be formed in ultra-violet light or under X-rays. The pattern would also carry the composition of the paper on which the book is written as also of the binding material. In fact, there would be an associated pattern which would describe the forces that bind the pages together, giving their strength as also the force of gravity acting upon the book. Surrounding the book would be the air molecules and a pattern defining the wind velocity. All these would appear as vibration patterns superimposed upon one another.

It would thus be clear that in order to understand the vibration patterns of the cosmic spectrum, when received directly in the brain, we would need a number of transformations of the mind to find a correspondence between the patterns as they appear and our knowledge of the subject which they depict. We would have to identify the laws of nature such as the force of gravity, laws of behaviour of heat and light, electromagnetic forces and so on. All these would appear as strong vibrations which carry the smaller vibrations along them. The attributes and qualities of different objects would again be still smaller vibratons which the objects carry along with them. The static and dynamic condition of an object would then be the sum total of all the vibration patterns associated together. Patanjali has defined these mental transforma-

tions as the Parinamas of 'Dharma', 'Lakshana' and 'Avastha'. In general we must define every branch of knowledge by a distinct series of vibrations selectively, we can isolate the desired information from the maze of data presented to us by the cosmic spectrum.

A Yogi who practices all the mental transformations can then see and understand the information contained in the cosmic spectrum directly. He can then acquire much more knowledge of any subject by merely sitting silently in meditation compared to what we collect by visiting places, reading and hearing about objects and by scientific analysis. Once the Yogi is able to analyse every aspect of our experience as a pattern of vibrations, he can also change our observations or create new experiences by regenerating and rearranging vibration pattersn. This leads to the mysterious occult happenings generally classified under the title of psycho-kinetics. In our scriptures these powers are known as 'Siddhis'; or super-natural powers. We shall study some of them in the next chapter.

CHAPTER IX

THE MECHANICS OF SIDDHIS

We have seen that the practice of the last three components of Yoga, namely Dharana, Dhyana and Samadhi, leads the meditator to a state of trance in which the mind is in direct communication with cosmic vibrations. What actually happens is that the brain gets progresively detuned from the patterns of physical, astral and mental planes which normally keep resonating in it and which make us constantly conscious of our body and of our surroundings. As these patterns are driven out one by one, the brain becomes more sensitive and starts picking up cosmic vibrations directly without the need of sense organs. In the normal course also we pick up cosmic vibrations directly but we do not notice them as they are overshadowed by the stronger vibrations produced by our sense organs and the circulating currents of our feelings and emotions. Once the stronger vibrations are removed the cosmic vibrations become prominent. In this state the mind loses its self-consciousness and is open to accept any 'Prataya' that the brain offers it. The brain becomes omni-sensitive and is fully transparent to any vibrations which enter it. A controlled trance attained through the Yogic method of meditation enables the Yogi to permit the cosmic vibrations to enter the brain in a regulated manner so the brain can analyse them systematically and understand the messages contained in them. The process of building up such a controlled trance through the repeated practice of Dharana, Dhyana and Samadhi is known as Samyama. Samyama followed by the three mental transformations of Nirodha, Samadhi and Aikagrita Pranamas then enables the Yogi to acquire occult powers known as Siddhis.

PAST AND FUTURE:

The first Siddhi that develops as soon as we are able to attain Samyama and perform the three Parinamas successfully, is the ability to read the record of our own experiences. Now reading the record

of experiences is not the same thing as recollecting old memories. It is more like a process of deep introspection in which we can see our memories and thoughts as detached objects without any feelings or emotional involvement on our part. We observe and analyse these thoughts as an independent observer. In terms of the theory of vibrations which I have been using, the two processes are quite distinct. In the course of ordinary thinking my brain remains tuned to the Atmic vibration and recovers the memories and impressions by demodulating this vibration. On the other hand, when I perform Samyama and go into a state of trance, my brain is detuned from the Atmic vibration and is receiving the impressions by direct pick-up. The patterns of my own Jivatma are the most prominent ones in the vicinity of my brain and I pick them up as the first 'Pratayas'. These are the impressions of my current memory as well as those of my Samskaras and Karmas, that is, impressions of my past lives. These impressions enter the brain as independent events associated with my Jivatma. I am now looking at these impressions as an outside observer. Although in the state of trance I have no self consciousness, but the processing power of the brain is still there. By the practice of Nirodha Parinama, I can refer back to my knowledge and power of reasoning to undersand and analyse these impressions. By placing these events in a chronological order I can trace the path my Jivatma has taken through the vast sea of cosmic vibrations. By extra-polating the path I can also ascertain the nature of events I am likely to experience in the future. Thus the first Siddhi which develops as a result of Samyama enables me to learn my past and my future.

SPACE AND TIME:

When we think of the manifested universe as a spectrum of superimposed vibrations, the concepts of space and time become relative and subjective. There is no absolute space and there is no absolute time independent of the person who is appraising the scene. Each living being defines its own frame-work of space time in which it is observing and experiencing events. As human beings our assessment of space is by the intensity of vibrations which we pick up while our assessment of time is by the clock of our Atmic vibration. Once the brain has tuned to a specific Atmic vibration, it keeps cataloging the events it comes across in a time dimension based upon the number of cycles elapsed between

successive events. In the state of trance, when the brain has detuned from the Atmic vibration, it can function at any other frequency. If a lower frequency is chosen, we move back in time and recall past events; if the frequency is higher.we see prospective images of the future. Without any specific frequency of tuning, the events form a jumbled maze through which the different Jivatmas are tracing different paths to describe the order of their experiences. Patanjali has described past and future as all existing all the time:

अतीतानागतं स्वरुपतोऽस्त्यध्वभेदाद्धर्माणाम् ।

"Atitānagātām svārupato 'styādhava-
bhedad dharmāñam."

Yoga - Sūtra IV -12

(The past and the future exist in their own, real form. The different of Dharms or properties is on account of difference of paths.)

Even in the conscious state, when we try to recollect a past event, the brain adopts a similar techique. The part of the brain which is tuned to the Atmic vibration and is acting as our clock of current events, comes to a stop for a moment.During this moment we shift back in time by several hours, days or even years, and pick up a 'Prataya' from our Jivatma which is then temporarily stored in the brain. The pattern of the Prataya then spreads in the different lobes of the brain and we get a glimpse of the visual images and sounds depicting the past event. The associated sensory inputs including any tastes, smells or any feelings and emotions we had experienced when the Prataya was first deposited upon the Jivatma are brought back to us. We thus get a vivid recollection of the event as a memory. During the time we keep examining this Prataya, the brain clock remains locked and we lose the sense of passage of real time. As soon as we drop this Prataya, the brain reverts to its normal functions and starts processing sensory inputs. We are back to consciousness once again but we have missed a part of the happenings which occured while we were absorbed in thought. The brain clock starts once again and we are back to the progressive story of our life.

During conscious recollection of past memory, the brain remains tuned to the Jivatma and hence events of the past that are picked up are those that are imprinted upon the Jivatma. My own personality is, therefore, always present in all my memories; in fact I am the chief actor around whom the events are taking place. In a trance the situation is different and I am not tied down to my Jivatma. I can now see the past events in isolation without any relation to myself. I can, for example, see what happened in my house while I was in the office. I can recall the scene of a burglary which took place in my absence and can even identify the thief if I know the person. Recent events or events connected with persons I know can be picked up more easily as these patterns I can identify by tracing the path of a known Jivatma. In all cases when I go into a trance, I must start by performing Samyama upon a definite object so that I pick up only those patterns which relate to the object. Otherwise, in the maze of patterns which I come across during my trance, it would be difficult for me to identify and describe individual events with any vividness or certainty.

PREDICTING FUTURE:

During trance, we see all events, past and future, as floating vibration patterns. We can isolate those which are associated with a particular Jivatma by performing Samyama upon the Jivatma. By connecting these patterns together we can trace the path the particular Jivatma has taken in its recent past. By extra-polating this path we can also predit the course of events which the Jivatma is likely to encounter in its immediate future. But we cannot be certain of the future as the Jivatma may deviate from the extra polated path. The brain which is tuned to the Jivatma has its own resonant frequencies and picks up patterns containing frequencies to which it is resonant. Thus the path of the Jivatma is not predetermined but depends upon the resonant structure of the brain, or , in other words, upon the desire and will of the person. There are certain patterns, however, which are so large that they will always fall in the path of any Jivatma. We can, therefore, predict events connected with such patterns with certainty. The sun will always rise in the morning or that summer will always follow the spring season. But what effect the spring season will have upon a particular person will depend upon the mental termperament of the person and cannot be predicted merely by extra polation of the path. It

will require a complete study of the mental traits of the person, his likes and dislikes, attractions and aversions, fears and obsessions before any accurate prediction can be made. Even then the prediction will be uncertain as the resonant cavities of the brain could be inhibited by the person with his will power. Hence, the exact experiences a person will have in future can only be assessed but not predicted with any degree of certainty.

ASTROLOGY:

During trance we see all objects as vibration patterns. The living objects appear as dynamic patterns. These are the Jivatmas of living beings. The non-living objects appear as static patterns and are the Atmas of the inert objects. In cosmic parlance all objects have an Atma whether living or non living. When we perform Samyama upon any object we absorb the Atma of that object as our own Jivatma and thereby learn many things about that object by observing our own sensations and reactions. The larger objects such as the earth, the sun, the moon and other heavenly bodies display very strong and powerful vibration patterns. These patterns sway the weaker vibrations of individual Jivatmas along with them just as 'sea-waves carry smaller ripples riding over them. Thus the paths traced by individual Jivatmas are influenced considerably by the heavenly bodies in the vicinity. This principle is used in Astrology to determine the effect of heavenly bodies upon the lives of indivuduals.

We are already aware that the sun, the moon and other heavenly bodies produce the seasons, winds , rain and tides upon the surface of earth. What is not so apparant, and is not accepted scientifically, is that these heavenly bodies also affect the temperament of individuals and define the course of experiences the individual will pass through while living on the surface of earth. During Yogic trance when we see huge vibration patterns pushing and kicking around smaller patterns like a football, we realize how much our lives are affected by the powerful occult forces around us. Purely on the theory of vibrations it is diffiuclt to predict the resultant movement of an individual Jivatma among so many strong forces. It is like predicting the resultant path of a football in a field with 22 players all bent upon kicking it. However, some statistical co-relations can be obtained. If we plot the world events such

as earthquakes, wars, floods etc., which have affected large population of living beings on a time scale and also plot the placement of the sun, moon and the planets on the same time scale, we shall find a positive co-relation between the two. Our ancient philosophers and learned astrologers have systematically documented such co-relations between the placement of heavenly bodies and the experiences of individual Jivatmas bracketted together upon the time and place of birth. These are the horoscopes which form the basis of the Indian system of astrology.

A horoscope can be made for any child if the date, time and place of birth are accurately known. The horoscope displays the position of the sun, the moon and the five closest planets with reference to the Zodiac constellations in the sky. The placement of the shadows of the sun and earth (Rahu and Ketu) are also marked. So far the procedure is purely scientific and tallies with astronomical calculations. But then, based upon the position of the heavenly bodies at the time and place of birth, a life profile of the child is drawn with reference to documented literature. The life profile includes such events as the proficiency in education, state of health, time of marriage, number of children, prosperity or struggles during life and expected duration of life span. The forecasts are based entirely upon the documented literature and have no other scientific basis. They depend upon the accuracy of the literature and upon the knowledge and expertise of the astrologer in relating the events of the individual's life.

The predictions made by the study of a horoscope define events in terms of the temperament of the individual and not in objective terms. For example, marriage relates to the emotional experience of mating and having children rather than the actual ritual of marriage or the date of registration. The temperament of the individual is, in turn, guided by the Samskaras and karmas and is further influenced by the heavenly bodies. Thus two individuals born on the same date and time may have completely diferent experiences in their lives. Even the same events may appear immensely pleasurable to one while to another it may be quite painful. Hence not much reliance can be placed upon astrological forecasts except a very general idea of the type of life profile one may have. Predictions of the future are based on statistical assessmet and could not be applicable with certainty in individual

cases. On the other hand forecasts made by accomplished Yogis based on Samyama and premonition can be more accurate. Such forecasts do not draw a life profile but describe individual future events in great detail

PREMONITION:

Premonition is a glimpse of some past, present or future event that we may get without using our sense organs. It could be in a dream while sleeping or in fully conscious waking state. We all experience such premonitions off and on. It results in knowing something without any means of learning it. If somebody comes and stands behind your back while you are reading, you will soon come to know of it and look behind even though the person has made no noise or given any other indication of his or her presence. Similarly if someone is staring at you in a crowded room, you will soon come to feel it and look back at him. These are premonitions which we experience every now and then. There is no scientific explanation for such phenomena. In our ancient wisdom, however, these are obvious results of our spiritual existence. In terms of the theory of vibrations which I have been using, the brain is constantly picking up vibration patterns directly even though we do not notice them because of our engagement with more prominent and stronger vibrations being generated by our sense organs. However, once in a while, during its transition from one pattern to another, the brain becomes free and in this state may pick up a pattern directly. It is a state of involuntary Nirodha Parinama. We go into a momentary trance. Normally we pay no attention to such premonitions and discard them as of no consequence. However, if we concentrate upon these momentary trances and practice to prolong them then we would be in the same situation as if we had practiced Yogic Samadhi.

During Yogic Samadhi, when the brain has been detuned from the Atmic vibration, we could tune to a higher frequency and thereby move forward in time. We would then see events which lie ahead in the path of our Jivatma. We will have clear visions of events which are going to take place. If, at this time, we perform Samyama upon another person, we could similarly see his or her immediate furture events. This is the type of forecasting which professional astrologers, with the capability of going into Yogic Samadhi, can do. It is still not certain that a predicted

event will actually happen. The path of the Jivatma is constantly being steered by our desires and will power. By proper control of will power we can always avoid and steer clear of events we do not like; wish them away so to say. However, the exact mechanism to do so is not clear in the maze of events that lie in the path of our Jivatma. Some of the patterns are just too large to bypass and we cannot help facing them. They are like day following the night. But others are like rain and wind which we can avoid. The Yogic astrologers often come up with solutions which will ward off likely trouble in the future. How far such solutions are learned decisions and how far fake cannot be determined. Much depends upon the knowledge and integrity of the astrologer. There is thus considerable controversy on the subject. If future is predetermined how can it be warded off? With the knowledge of the theory of vibrations we can now see the actual mechanism and appreciate how far the future events are fixed or flexible.

Another factor to take into account in forecasting future is that we can only forecast the results of interaction of vibrations, that is, the effect the events will have upon our mind and not the objective physical details of the event. The effect is governed by the temperament of the individual and can be different for different indivuduals. So a good astrologer must first ascertain the temperament of an individual before proceeding to forecast his future. The temprament of an individual is determined by the impressions formed upon his Jivatma by the events of his past and of his previous lives. The impressions upon the Jivatma have a relationship with the impressions upon the body of the individual such as the lines and corrugations upon the palms of his hand. This, however, is the field of palmistry rather than that of astrology.

PALMISTRY:

Palmistry is the art of reading the palm of the hand to determine the fate and temperament of an individual. it is practiced throughout the world though no scientific explanation for the predictions has been found. The lines and corrugations on the skin of the palm are related to the mental traits and life profile of an individual. In addition to the palm, one may read the forehead, the soles of the feet or other permanent markings upon the body. The co-relation of such markings with the events of life are derived from documented literature without any

reasoning or theory behind it. To a Yogi who can see the pattern of the Jivatma under trance, however, the documented co-relations make a lot of sense. As I had mentioned earlier the human embryo takes shape in the womb of the mother only after it has picked up a Jivatma. In the first few weeks of conception the fertilised egg-cell keeps multiplying without any descrimination. After some time this lump of cells picks up a certian vibration and starts resonating to it. This vibration then beomes its Atma. The Atmic vibration usually carries a lot of impressions as its modulation; impressions deposited upon it by living beings who had been tuned to it earlier. These are the Samskaras and Karmas of the Jivatma. This Jivatma then guides the embryo in its growth and in its subsequent interactions with external environments. The growth of the cells now takes the shape of a human being guided by the map imprinted upon the Jivatma. The Samskaras and Karmas are also mapped and are reflected in the lines and corrugations of the skin in some natural pattern. To decode this pattern and to relate the lines and corrugations with the qualities of mind and with the destiny of the future is the art of palmistry. Again the co-relation between the lines and corrugations on the one hand and the mental traits and likely events of life on the other has been done statistically and documented for future use. Its accuracy is only statistical and individuals may drift far apart. the reliability of this mehtod is only to the extent correct reading and interpretation of the lines can be made and also to the extent of the authenticity of the documented literature. A Yogi in trance can also not make out much from the jumble of impressions he sees in the Jivatma. While mental traits can be ascetained with some certainty, accurate prediction of future from palm-reading is, generally, not feasible.

MIND READING:

When a Yogi performs Samyama upon an object say upon a bird, he loses contact with his soul and, in its place, adopts the soul of the bird as his own soul. In sceintific terms the brain gets detuned from all vibrations of the Jivatma and starts picking up the Atmic vibration of the bird. As these vibration patterns fill the brain, the Yogi acquires the personality of the bird. Not physically, of course the Yogi continues to function in his own body. But mentally the Yogi behaves like the bird and thinks like one. He may flap his arms like the wings of the bird and would be surprised to see that he cannot fly away. He may feel sick or handi-

capped. Birds, as we have discussed earlier, have a group soul. A flock of them are tuned to the same Jivatma and function under a common instinct. Now if the Yogi is also tuned to the same Jivatma, he would also share the common instinct. The Yogi would be able to experience the instincts and motivation that keeps the birds together and makes them behave in the manner they do. If the Yogi has practiced Nirodha Parinama sufficiently he can then revert back to his own Jivatma, when he wishes, and analyse the instinctive patterns of the birds in terms of his own knowledge as a human being. He can then understand the chirping of the birds and the other signs they use to communicate, and derive the exact meaning of their intent. In other words the Yogi can understand and speak the language of the bird or any animal he choses to be the 'Prayaya' of his Samyama.

Conversely, if the Yogi, while performing Samyama upon a flock of birds, acts in a certain manner, the entire flock of birds will also act similarly. If the Yogi gets angry and wants to hit a person, all the birds of the flock will pounce upon the person in equal display of anger. The Yogi is now sharing the Jivatma with the birds and is in direct telepathic communication with them. Such instances of telepathic communication and sympathetic action are not rare to see in our day to day life. A child who keeps pet animals understands what the animals want and is practically able to talk to them. Since a child's brain it comparatively free of memory patterns and emotions, he is able to attain a state of Samyama with his pets more easily and without going through the Yogic methods of meditation. The Samyama so obtained is somewhat uncertain and the child is not able to sustain it by will power. However his communication is quite effective. The same phenomenon we see in a circus when the ring master moves his horses, monkeys and elephants making them perform tricks on his command and bidding. Though it may appear that the animals have been trained by practice and drill, it is, in fact, partly telepathic communication and mind reading through Samyama that is taking place. Another person taking the position of the ring master may not be able to get the same response from the animals even if he repeats exactly what the ring master was doing.

TELEPATHY:

By the controlled practice of Samyama the art of telepathy can be developed much further and extended to great distances. In the cosmic

spectrum there are no distances as all the vibrations fill all the space all the time. The vibrations which are regenerated by living brains become predominent in their vicinity and can be picked up more easily. Many experiments have been conducted by para psychologists on telepathy. The experiments which have shown positive results inlcude communication of a name by telepathy. A number of volunteers are made to think of a particular object, say a rose flower, together at a given time. An outsider is then asked to name any flower at that time. Chances are more than even that the outsider would name the flower as a rose. This type of experiments depend upon statistical results without any preparation of the mind. When a Yogi prepares his mind by the process of Samyama, he can communicate far more accurately with another person through telepathy. Freak telepathic communication between two persons thinking of one another at the same time, such as two lovers emotionally recalling each other, are not uncommon. More advanced Yogis can almost talk to one another at a distance. They do not need a telephone!

In order to establish telepathic communication with a person all that a Yogi needs to do is to perform Samyama upon the Jivatma of that person. He has to know the person or have sufficient data and description to pick up the right Jivatma. Once picked up the Yogi can read the thoughts of the person as well as transfer his own thoughts to him. Of course, it is not like talking on the telephone because words and sounds do not come into the picture. It is the gist of ideas which are picked up by the brain and which appear as self-induced inspiration but are actually ideas being received from the other person. Telepathic communicaton may not be as exact as spoken words but may carry the spirit of the message more accurately than speech, for it is free of the vagueness and ambiguities of spoken words.

OCCULT VISION:

A more useful result of the practice of Samyama is occult vision. This is practiced by many in India and abroad. Crystal gazing is one example. In this case Samyama is performed upon a lost object, or upon someone whose whereabouts or welfare is to be ascertained. A child is often used as a medium for it is easy to bring the child into the state of partial trance by suggestion. In a partial trance only a part of the brain

becomes free of impressions. Suppose the occipital lobe of the brain is blanked off. Then the child will not see his surroundings but will be able to hear and talk all right. The occipital lobe will now be picking up cosmic patterns which will give the child a mixed vision of strange objects. Now by suggestion the child is made to think of the lost object. If the lost object is known to the child he can identify it amongst the faint images. He can then narrate its location or surrundings as he sees them. It may be a very crude description but would tally with the child's assessment if he were to actually see the scene of the lost object. Many Yogis train themselves in occult vision and try to earn a living out of it. However, as I had mentioned earlier, the objective of Raj Yoga is frustrated if one goes into use the Siddhis developed for personal gain. The will power built up to free the brain of current impressions is now used to earn money. This causes another type of resonance in the brain with the result that the power to attain Samyama gradually diminishes.

An immediate advantage of occult vision is that one can see minute, distant or hidden objects which it is not possible to see in the normal course with the eys open. One could see through closed walls like X-ray pictures similarly one need not use microscopes or telescopes and obtain the seeing a same information by occult vision. It is easy to understand how one could see hidden objects by direct perception. Once the brain is receiving vibration patterns directly, all objects in the vicinity will be seen whether or not light is actually being received in the eye. The Yogi is not dependent upon light; in fact he is not using the eyes at all. It is somewhat more difficult to appreciate how microscopic small objects can be seen without a microscope or distant objects seen with details as one would see with the aid of a telescope.

In the cosmic universe of vibrations the size and distance of objects is determined by the amplitude, frequency and phase of vibrations. The amplitude of a vibration is large at a point where it is being regenerated. Thus the Jivatma of a living being is strongest at the location of the living being. It gets weaker as we go away from the source. But if we can pick up this vibration and regenerate it using our own brain, we can derive all the information constained in the vibration and thus see the living being as if it were standing in front of us. With a telescope we can see only as much detail of a distant object as the telescope's objective lense will resolve. But by performing Samyama upon the object, in the

state of trance, we can see as much detail as we want. The Jivatma of the object is in our brain to analyse it to any extent.

The size of an object is a relative measure. We measure it in terms of the dimensions of our own body. Thus an object a few meters high is large. An object a few millimeters in size is small. In terms of vibrations we measure the size by the wavelength of our own Atmic vibration. This puts the limit of our perceptible measurements to about 10^{-27} meters after which the Heisenberg's priciple of uncertainty comes into play and we cannot see the details with any precision. Normally the objects we see with a microscope are much larger and the limit of perception is determined by the wavelength of the light we are using to illuminate the object. We can see still smaller objects by using ultra-violet light or X-rays. When we perform Samayama and go into a trance, we are no longer dependent upon our Atmic vibration. The brain is no longer tuned to it. We can now tune the brain to a vibration of much smaller wavelength. Then if we perform Samyama upon a minute object we would see it much more magnified; in fact as large as we may like and with all its details intact. Again we are not dependent upon the quality of the objective lens of the microscope and can see details which the microscope could not pick up.

THE VANISHING TRICK:

Magicians world over are performing vanishing tricks and materialising objects out of nothing. A handkerchief or a ring, placed in a sealed box vanishes altogether and then reappears inside an orange! A rabbit comes out of an empty hat or a flock of pigeons are pulled out of a bag which can hardly hold one of them. Many of these tricks are sleight of hand. But a Yogi can as well materialise or dematerialise objects by his power of Samyama. When we perform Samyama upon our sense organs we realise the total process involved in our perception of objects with the help of our sense organs. For example, if we perform Samyama upon our faculty of sight, we would come to know of the sequence of operations involved before we are able to see and comprehend things around us. First, light reflected from an object enters the eye. Next, the light sensitive cells of the retina send a series of impulses into the optic nerve. Next, the impulses meet in the occipital lobe of the brain. Next, the impulse currents spread over in the cerebral cortex and reverberate in different modes of vibrations. So far the procedure is based on our

knowledge of biology. But then the Yogi sees that the frontal lobe of the brain is receiving all sorts of vibrations which it is demodulating from the pattern of the Jivatma. These are our memories. The two sets of vibrations meet in the association area of the brain. Common frequencies regenerate specific patterns. The regernerated vibrations bring out the memories associated with the visual image on the retina. We now recognize the object with reference to our previous memory and knowledge and comprehend the scene presented to us.

This is the total sequence. Any element of this sequence failing we will not be able to see the object. If there is no light, or if the eye is damaged or the optic nerve is broken, we are blind. This is medical blindness. We are blind not only to the particular object but to everything within sight. But if the second part of the sequence fails we would become blind only to the particular object. We would see but would not notice the object. We would fail to recognize it or comprehend its existence. The power of comprehension is derived from our brain tuning to the Jivatma and deriving memory patterns from it. The connection between the memory pattern and the visual pattern is made in the association area. If the association area of the brain is damaged we would lose the power of recognition and comprehension. Or if the brain fails to pick up the memory pattern from the Jivatma then also we would fail to notice the object even though we see large number of objects around us. All these objects form an image upon the retina and should become visible. But we do not notice them all. In fact, except for one or two objects we are looking for, we do not notice the rest of them at all. Now this power of comprehension can be removed by either removing the memory pattern from the Jivatma or by deactivating the association area of the brain. In the first case we will lose the memory of the object; in the second case we will fail to notice it even if we desire to. Patanjali has described the Siddhi of making things disappear in the following words:

कायरुपसंयमात्तदग्राह्यशक्तिस्तमये
चक्षुः प्रकाशासंप्रयोगेऽन्तर्धानम् ।

"Kaya - rupa - samyamat tad - grahya - sakti - stambhe
caksuh - prakasasmprayoge ntardhanam."

Yoga-Sutra III-21

(By performing Samyama on Rupa, the faculty of sight, on suspension of the receptive power, the contact between the eye of the observer and the light from the body is broken and the body becomes invisible.)

A Yogi who performs Samyama upon his own body, particularly upon its appearance as perceived by others, will soon find the formula by which molecules of his body absorb light and reflect selected colours which then reach the eyes of the observer and form a colourful image of his body in the mind of the observer. In this state of Samyama the Yogi can then change the formula so that his body changes colours or becomes transparent and vanishes from sight altogether. Alternatively the Yogi can perform Samyama upon the power of comprehension of the observer and suspend it for a while so that the observer is unable to notice his presence at all. The Yogi can perform a similar Samyama upon any other object which he wishes to remove from the scene. He could, similarly, make any sounds inaudible or remove any tastes or smells from the perception of others. Later, when he wishes, he can restore the vision or other forms of perception, so the object materialises once again at the same or any other different location under the command of the Yogi.

This Siddhi of controlling the power of perception and comprehension, once practiced, can be used to perform all the vanishing tricks without any sleight of hand involved. In fact, it is much simpler for a magicina to learn this Siddhi than to arrange all the magic boxes and mirrors to perform the same trick by deceit and sleight of hand. I am confident most of the Indian magicians who perform vanishing tricks have actually attained the Siddhi as they do not appear to be equipped with a lot of gadgets needed otherwise. Even the western magicians, who apply themselves seriously to perfect their feats, attain this Siddhi by sheer will power without their knowing it. Yuri Geller and Houdson, known for their escape feats, have described the efforts and practice put in by them to master their tricks and they themselves feel that they have attained some occult power which helps them to perform their tasks without any effort.

MESMERISM AND HYPNOTISM:

Mesmerism is the art of making someone see an object which is actually not there. It is done by mental suggestion. I may suggest to you

that there is a cat sitting on your table. You will then actually see a cat sitting there and believe it to be so. Another person who has not been mesmerised will not see the cat. Many magicians use mesmerism in their performances.. Hypnotism is a more advanced technique. A person may be hypnotised to go to sleep or to forget about the pain in his leg. Many medical practitioners use hypnotism to relieve their patients from pain. For example under hypnotism Pregnent women can undergo delivery without the labour pains. A person may be hypnotised to believe that he is a king. He will then behave like a king. It is a complete transformation of personality. Hypnotism is also performed by menal suggestion. How does the suggestion work? Science has no explanation though it accepts the fact of hypnotism and uses the technique in medical treatment. Analysing on the theory of vibrations, both mesmerism and hypnotism are easy to explain.

We have seen that our sensations, feelings, perception and comprehension are all results of vibrations circulating in the brain. Sensations are vibrations set up by nerve impulses received from sense organs. These vibrations reverberate in specific areas or lobes of the brain. They produce sensations of sight, sound etc., in the brain but without any clear perception. Feelings are circulating currents which reverberate due to self regeneration. They produce attractions and aversions but without any reasoning. Perception takes place when the brain derives vibrations from its Jivatma. These vibrations develop in the frontal lobe of the brain. They are our memories. Comprehension takes place when the vibrations set up by sensory inputs meet the vibrations derived from Jivatma in the area of association of the brain and regenerate matching patterns. Only when the sensory inputs match with corresponding memory patterns we recognize objects and comprehend the total situation. We then associate our attraction or aversion to the object and find a reasoning for it based upon our memory. But, in effect, comprehension is also a vibration pattern reverberating in the association area of the brain. So long as this pattern reverberates in the association, we have a complete comprehension of a situation, with sights, sounds and associated feelings. How this reverberation is brought about is not important. Hence, if we can artificially produce vibrations of a specific pattern in the area of association of the brain, we can make the mind to recognize the pattern and comprehend the situation described by the pattern in exactly the same way as if the person

had actually received the sensory inputs and matched them with his memory patterns. This, in short, is what happens in the case of mesmerism or hypnotism.

When a Yogi performs Samyama upon the mind of a person, he gets into telepathic communication with the person. In other words, the Yogi picks up directly the vibration pattern being formed in the area of association of the person and hence knows what exactly the person is imagining. Similarly the vibration pattern reverberating in the association area of the Yogi is transferred directly into the brain of the person. If the Yogi has a strong will power, the transferred pattern becomes predominent in the person's brain and he starts imagining exactly what the Yogi is transferring. The other sensory inputs of the person recede in the background with the result that he actually starts 'seeing' a cat sitting on the table or whatever else the Yogi wants him to see or believe. All that is required is that the Yogi concentrates upon the mind of the person and makes a pointed suggestion to him using all his will power. The detailed procedure of performing Samyama by going into a trance is not really necessary. After a little effort and practice anybody with a stable mind and a strong will power can perform mesmerism or hypnotism.

Most magicians in India as also in other countries use mesmerism and hypnotism during their performances. Since the audience consists of many persons with differing strengths of will and determination, it is not easy for the magician to enforce his will upon each one of them. Unlike psychiatric suggestion which can be repeated till the patient has absorbed it, the magician does not know the degree of absorption by each of his audiences. Also each one of the audience may not be attentive or have faith in the magician. The magician, therefore, prepares the ground by a lot of drum beating, shouting, music and light effects to digress the mind of the audience from the particular Prataya he wants to change in the area of association of each one's brain. When he is satisfied that nobody is concentrating upon the particular subject, he makes the suggestion and lo! every one sees and believes what the magician wants to show.

We see the effect of suggestion in our day to day life particularly upon small children. A child has full faith in its mother and would believe whatever she says. It can be induced to see or hear whatever the mother suggests without any real object just as it is induced to pass urine or

motion upon mother's command. We dogmatically believe in the nursery tales we heard on the mother's knee till better judgement proves otherwise. The classic example of suggestion is in Bhagwad Geeta where Lord Krishna, making pun with Arjuna, shows him shining stars in broad daylight. Arjuna nods and when Krishna asks him how he could see stars in daylight, Arjuna says, 'Lord, your words are so weighty that I atually see stars when you say they are there'.

OMENS:

If we perform Samyama upon our own Jivatma, we shall see a large number of impressions which represent our deeds of the current life as also of the past lives. These are our Karmas. According to our ancient philosophy, the Jivatma is burdened by these Karmas and is constantly attempting to neutralise them. In other words the pure vibration of the Atma goes in a state of unstable tension due to the modulations which form upon it and tends to revert back to its pure form by removing the modulations. It would, in the natural course, select such a path in the cosmic spectrum which would encounter it with opposite impressions so that the modulations can be neutralised. That is why we say that our destiny in any life is decided by our past Karmas. Now, out of the total Karmas, there are only some which can be neutralised in any given life span. These are the ones which find the current environment suitable for opposite interaction. Such Karmas are called 'Prarabdha Karmas'. In fact the time, place and circumstances of birth are determined, to some extent, by the Prarabdha Karmas of the Jivatma which are ripe for neutralisation. It is under pressure of the ripe Karmas that the Jivatma selects the womb of the mother in which it will take a rebirth.

When we have identified the ripe Prarabdha Karmas of our current life we can also know how many of them are remaining to be neutralised. Of course, many more are being accumulated which will have to find a subsequent birth for their neutralisation after they have become ripe. Now if we can trace the path of the Jivatma on the basis of the interaction of Prarabdha Karmas, we can determine which one of them is the last and can also determine how long it will take to reach the final interaction. Life must come to an end as soon as the last interaction is over, because afterwards the Jivatma has no further use of the present body and must quit. This is quite an accurate method of determining the

length of the life span. Apart from the time duration, which is somewhat subjective,we also see the last event or events which we must encounter at the fag end of our life. These events occur several time during a lifetime but they are also the landmarks which decide the end of life. It is from these landmarks that we can predict danger to life or its end. These landmarks are the omens of death. Since we are all generally freightened of death and extremely reluctant to die, such omens are seen as danger signs even if they are coming in the middle of the prescribed life. Loose description of such omens results in a variety of blind beliefs by which people avoid certain situations. Passing under a ladder, having a black cat crossing your way, or somebody sneezing just when you are starting for a journey, are some loose examples.

Similarly there are Karmas we can see in our Jivatma which materially change the course of our Jivatma, that is the line of our fate or destiny. We may move from misfortune to prosperity or vice versa. These Karmas are also events which we see as good or bad omens. The rewards and pitfalls of our destiny are not objective events but rather our experiences and our mental reaction to such experiences. Our Samskaras and Karmas are the patterns of our Jivatma which we use to match the patterns formed by our sense perception. Depending upon the degree of match or mismatch we feel pleasure or pain. Thus seeing the nature of patterns upon our Jvatma we can classify events which would be good or bad experiences. Such events, when translated into day to day occurances give us a list of Omens for all occasions. Actually only one out of several occurances may coincide with the good or bad fortune indicated by the Jivatma. But, since we do not know which occurance is going to be fateful, we treat all such occurances as good or bad omens. This is the reason of the blind faith in superstitions which is prevelent so much all over the world.

KUNDALINI:

Kundalini is the cosmic energy which gives vitality and strength to our body. As I have described earlier, cosmic vibrations, like any other vibrations, carry both intelligence and energy; SIVA and SAKTI. The energy content of a vibration is proportional to its amplitude; the information content, to its bandwidth. When vibrations from different sources meet, their amplitudes add together if they meet in phase. This pehenomenon is known as resonance. By creating resonance we can increase the amplitude of vibrations indefinitely and thus build up any

amount of energy. When solidiers march over a bridge, their rhythm of marching may coincide with the natural vibration frequency of the bridge. In that case resonance will be set up. So much energy may build up that the bridge starts shaking and may collapse altogether. That is why soldiers are commanded to fall out of step when marching over a bridge. We see many examples of resonance in our day to day life. Reverberation of echos in a room; whistling in public address systems, the unusually high tidal waves in some locations are examples of resonance.

When the brain is in a state of trance, we can, by the practice of Pranayama, regulate and control the flow of cosmic vibrations in the brain. Vibrations reverberate in the brain in closed loops and cavities of nerve cells. If we allow the vibrations of the right frequency and phase to reverberate in the brain, we can accumulate enormous amount of energy. This energy is Kundalini. It can give super natural strength to our muscles and can generate so much heat that it may burn our body or produce fire from the mouth.

The scientific explantation of energy building in a living body is through the process of digestion of food and extraction of fat from the food. When the body performs mechanical work such as when we run, jump or lift a heavy weight, our muscles contract and relax. The muscles consist of a large number of fibres which in turn, consist of a large number of cells. The cells collect energy from the digested food and help each fibre to contract when the muscle is required to pull. So the basic energy comes from food. But the amount of pull a muscle can exercise depends upon the number of fibres which tend to contract together. This number depends upon the instructions given by the brain which, in turn, is decided by the pattern formed in the brain. By will power we can increase or decrease the strength of muscles. We can lift a heavier weight under encouragement and applause by spectators. On the other hand if the brain is diverted or if we are dejected and depressed we feel weak and can hardly to any work. By the Yogic method of awakening Kundalini, we can direct all the muscle fibres to pull together and thereby increase our strength manyfold.

A Yogi, who can regenerate the energy of Kundalini, can perform miracles. He can, for example, allow a heavy truck to pass over his body without getting hurt. He can stop a motor vehicle, with a powerful engine, from moving merely by his hands. He can lift a weight

of several tons or perform any of the feats attributed to the 'He Man' of children's comics. He can be buried in a pit for several days without air, water or food and will survive because he can draw the needed energy from cosmic vibrations. Many Yogis attain the ability of awakening Kundalini and perform such feats for exhibition and earning a living. Of course, once they use their Yogic ability for personal gain, their capacity to learn higher Siddhis is reduced and their way to ultimate enlightenment is blocked. Demonstration for personal gain is a kind of resonance in itself which blocks the brain from finer tuning.

There are Siddhis of a much higher order which can be attained if we do not block our way by using the Siddhis as a profession. The higher order Siddhis arise from the capacity of our brain to function without the Jivatma for a certain period during which it is able to scan the cosmic spectrum without any bondage of the Jivatma. The Yogi then acts as a point-consciousness and surveys the remote areas of the cosmic spectrum to discover super-natural forces and attain super-natural powers. He then attains God-realisation and can exhibit powers which we attribute only to God Almighty. We shall talk about these high order Siddhis in the next chapter.

CHAPTER X

SOME MORE ADVANCED SIDDHIS

The mechanics of Siddhis which I have described in the previous chapter requires that the Yogi remains, all the time, associated with his Jivatma. He obtains information by direct perception from the cosmic spectrum and interprets this information with reference to the knowledge contained in his own Jivatma. His brain switches from the cosmic pattern to the pattern of his Jivatma, back and forth, in a free flow, by the practice of Nirodha Parinama. However, it is possible for a Yogi, who has attained Samadhi, to detune his brain completely from the Atmic vibration so that the Jivatma gets detached and becomes free to roam around as a point consciousness. In this state the body of the Yogi goes into hybernation or sleep till the brain is reactivated again and tunes back to the Atmic vibration. In the meantime, the Jivatma can use any other brain of a living being for its interaction with the environment or develop a brain and body of its own from the pattern contained in it using material particles freely available in the atmosphere. In the first case the body and brain picked up by the Jivatma come to life with the personality of the Yogi; in the second case an exact duplicate of the Yogi is formed. The original body and brain of the Yogi, after the Jivatma has been detached, can also tune into another Jivatma and thereby the Yogi can acquire a different personality.

In order to understand the mechanics of advanced Siddhis we must refresh the principle of life described in chapter IV on Purusa and Prakriti. We have seen that the cosmic spectrum which emerges out of void under space time limitation consists only of superimposed vibrations. Any one of these vibrations can act as the Atma of a living being. If the vibration of a particular frequency is assigned a certain bandwidth and provided with a demodulating mechanism, that is, a brain, it becomes a living creature. Every Atma with a bandwidth occupies a channel in the cosmic spectrum. This channel is known as the channel of the Purusa. Each Purusa is a complete life unit with a mind

and memory but with or without a physical body or a brain. However, the information contained in the channel of the Purusa describes completely the physical and mental personality of a living being. The brain is only a mechanism with no intelligence of its own. It is made up of inert matter drawn from Prakriti. When Purusa and Prakriti meet, a mind occupies a brain and the combination becomes a regular living creature. If the contact with Purusa is broken then the body dies and dissolves into Prakriti. The Purusa, on the other hand, remains ever alive with all its information intact.

KNOWING THE PURUSA:

A Purausa is established in the cosmic spectrum as soon as a vibration is identified with a central frequency and a bandwidth. In other words, a mind takes shape as soon as a packet of information is given the identity of Self or 'I-am-ness.'

निर्माणचित्तान्यस्मितामात्रात् ।

"Nirmāñā - cittāñy āsmitā mātrāt."

Yoga Sūtra IV-4.

(From egoism alone proceed the created minds.)

By dividing the cosmic spectrum into a number of channels a number of minds can be established. Each channel is a Purusa or the identity of a Self. The contents of the channel may have no relevence to any other part of the spectrum, say Prakriti, if it is established arbitrarily. But if the channel is created by a brain tuning to a certain vibration, then the contents will contain samskaras and Karmas which will provide good, bad or neutral experiences when interacting with Prakriti. Purusas so established by brains define the Jivatmas of living beings. They represent information channels which can interact with our environment and give us experiences. So if we want to identify and use a channel in the cosmic spectrum we must pick up one which contains a Jivatma. The Jivatma may or may not be associated with a living body for the present, but it must have been so associated at least once to contain impressions of sensory perception. On the other hand, if we want to create an artificial mind which is a replica of ourselves, we

must identify a channel which has not been used and is free from its own Samskaras and Karmas.

How do I know which channel is free and which has a Jivatma inside it? Patanjali has described a simple method to know the nature of a Purusa. During trance, when the brain is free of sensory impressions and is receiving the cosmic vibrations in a smooth flow, we can use a non-specific object, say, a clour, as a Prataya. If the brain comes across a channel of vibrations which contains the impression of colours, then there will be resonance and the brain will see the impression of colours as memory. We can now conclude that the brain is tuned to a channel which contains the Jivatma of living being which has eyes like ours. It is like tuning a radio in the short wave band. As soon as we hear a voice we know that we are tuned to a regular broadcasting station, even though we may not understand the language. At least the voice is human. Similarly we can identify Purusas by using non-specific Pratayas. We can easily distinguish between pure cosmic vibrations and those containing impressions of Prakriti. Although both are basically vibrations, but one is pure, the other is modulated. The distinction becomes clear by the pattern of modulation.

सत्त्वपुरुषयोरत्यन्तासंकीर्णयोः प्रत्ययाविशेषो
भोगः परार्थात्स्वार्थसंयमात्पुरुषज्ञानम् ।

"Sattva-puruṣayor atyantāsaṃkīrṇayoḥ pratyayaviseso
bhogaḥ parārthāt svārtha-samyamāt puruṣa-jñānam."

Yoga-Sūtra III-36

(Experience is the result of inability to distinguish between the Purusa and the Sattva , though they are absolutely distinct. Knowledge of the Purusa results from Samyama on the Self-interest of the Purusa apart from another's, that is, of Prakriti).

What happens if, in the state of trance, we tune the brain to our own Jivatma? Normally the trance will be broken and we shall be back to the conscious state. However, if we tune to a frequency which is close to the Atmic frequency but not exactly the same, we can still remain in

trance while observing our own thought patterns as unconnected objects. Due to the slight difference in the frequency, the resonant circuits of the brain will not reverberate. There can be no feelings or emotions. We shall be seeing ourself as an outsider, without any prejudices or bias. This is a good method of introspection and knowing our own Purusa.

INTUITIONAL PERCEPTION:

In this state of trance, when the brain is tuned to our own Jivatma, but with a slight shift of frequency, we can identify cosmic patterns with reference to our own knowledge as we do in the conscious state. The sensory inputs are fully blocked. The sensitivity of the brain has been increased to receive cosmic vibrations directly. The brain is able to demodulate patterns of our own Jivatma and see them as our own memories though in a slightly different colour and without any feelings. Thus we are able to identify our environments with reference to our knowledge and experience but wihout using our sense organs. We can see objects, hear sounds or perceive smells and tastes while still in the state of trance. This is known as intuitional perception. Magicians who have attained this advanced Siddhi can perform many miracles. They can copy a drawing while completely blind folded or hit a target with a bow and arrow better than what they could do with eyes open! This is because the cosmic patterns give far more details for a correct aim than visual images. An Indian magician, P.C.Sirkar, used to drive a motorcycle in a crowded street while completely blindfolded. The Siddhi of intuitional perception is attained by the practice of performing Samyama upon the Purusa as described in Yoga Sutra II-36 given above.

SLEEP WALKING:

Sleep walking is also a case of intuitional perception. During sleep the brain gets detuned from the Jivatma. The sensory inputs are effectively blocked. The sensitivity of the brain is increased enough to pick up cosmic patterns directly. The contact with Jivatma is somewhat loose. The memory patterns and the directly perceived patterns mix in a jumble. These are our dreams. We see odd objects or the wrong people at the wrong places. In some cases if the brain gets tuned close to the Atmic vibration, intuitional perception starts taking place. The sleeper, while in this state of trance, with his eyes closed, believes himself to

be quite conscious as he is perceiving his surroundings by intuitional perception. He, therefore, starts walking and doing something he wanted to do. He is quite safe and is unlikely to fall down or collide with objects as his perception is quite good. He responds to spoken words but may not be able to understand involved commands as his tuning to the Jivatma is somewhat off the mark.

TRANSFERRING JIVATMA:

During trance, when the brain is tuned close to the Jivatma, but not to its exact frequency, intuitional perception takes place and we feel quite conscious and aware of our surroundings. The distinction between this state and the state of full consciousness is marginal. In the state of full consciousness, the brain is tuned exactly to the frequency of the Jivatma so that the vibrations derived from its component patterns resonate fully in the brain giving us a set of sensations, feelings and emotions which we recognize as our state of wakeful consciousness. During the state of intuitional perception the tuning is slightly out so that the derived vibrations are not able to resonate in the brain but matching of memory patterns is possible. In this state we can recognize the resonant bonds which tie the brain to the Jivatma. These are the bonds which keep us alive under adverse conditions. In the case of serious injury or illness it is the resonant bonds of the brain with the Jivatma which keep the Jivatma hovering around the body and thereby restore the injuries or illness to health again. If the Jivatma gets completely detuned, and all the bonds are broken then the person will die.

During trance we can identify the bonds which are essential to keep the Jivatma rigidly bonded to the brain and the body. We can also find out the way to loosen these bonds by selective detuning. Now if we perform Samyama upon another body and brain. We can identify corresponding circuits which can resonate to the patterns of our Jivatma and hence act as bonds to hold our Jivatma to that body and brain. Knowing this channel of communications through common bonds a Yogi can smoothly transfer his Jivatma into another body, dead or alive. If it is a dead body which has not yet been decomposed, the Yogi can bring it to life again with his own Jivatma. The body will acquire the Yogi's personality while the Yogi's own body will remain in a state of

sleep or hybernation depending upon which circuits or programmes have still been left tied to the patterns of the Jivatma. The Yogi can also transfer his Jivatma to another living body by suppressing the natural Jivatma of the body. This is possible if the chosen body is of a person who is fickle minded having a loose bondage with his Jivatma. In such a case the person will temporarily acquire the Yogi's personality and will function according to the Yogi's will.

WEIGHTLESSNESS:

Once we have mastered the technique of loosening the resonant bonds between the Jivatma and our physical body we can perform many advanced Siddhis including those of lifting the body above ground, making the body large or small, light or heavy etc. The principle to understand is that the body consists of individual living cells, each of which is a complete living organism working on a specific pattern of the Jivatma. The cells are bonded together under the overall pattern of the Jivatma and resonate to its patterns as one integrated whole. We should look upon our body, not as a solid object, but rather like a swarm of bees, each individually flying in formation to give a certain shape to the total mass. Although the cells are not moving relative to one another, the particles inside them, right upto the molecules and atoms are actually in a state of random motion. The only force which keeps them positioned together in a certain shape is the force of resonance under which they vibrate in a rhythm supplied by the Jivatma. If the rythm of the Jivatma is withdrawn the individual atoms, molecules and cells will just fly apart and the body will disintegrate and decompose. This actually happens when a person dies.

Now the weight of the body is the sum of the weight of all its particles. But it is not a dead weight as the particles are perpetually in a state of motion. It is the resultant pressure which the particles exert towards the ground as a result of the vector sum of all the forces. Vector sum means the sum of the components of different forces taken only in one direction. Thus the vector sum of two forces which are equal but act in opposite directions will be zero. The pressure exerted by different particles of the body acts in different directions, but the resultant of the vector sum produces a certain pull downwards which we measure as the weight of the body. Suppose I stand upon a weighing

machine. The weighing machine may read say 140 Kg when I am absolutely still and keeping my body limp. But suppose I start moving my hands an other limbs as if preparing to jump up, the reading of the machine will start fluctuating and show reduced weight even though I am still wholly resting upon the machine and using no external support. This is because the weight of a living body is not a dead weight but a dynamic force.

When we perform Samyama upon the paricles of the body and their movements, we see the pattern of the Jivatma which is regulating their vibrations. We also see the pull of gravity which is keeping the body upon the ground. Now, in a state of trance, I can rearrange the controlling pattern to provide a thrust upwards. My body can then become weightless and may even lift up and suspend in air. The Siddhi to provide an upward thrust is called 'UDANA'. Using this Siddhi a Yogi can walk upon water or prevent himself from injury from thorns, mire or mud while walking. In fact, by relating the pattern of his Jivatma with that of some flying object, the Yogi can fly in air or in space to any heights.

When Samyama is performed upon the fundamental particles which make up our physical body, we can see the vibration patterns of Rajas, Tamas and Sattva, the three attributes of which the body is made. At the level of fundamental particles, we find that our body, which looks so solid, is actually having vast empty spaces in between its constituent particles. If the size of an atom is taken as one centimeter, the empty space between different atoms may be several kilometers. Thus there is a lot of scope to shrink the body to a much smaller size. By the proper traformation of vibration patterns a Yogi can reduce his body to the size of a mosquito, still retaining its shape and all his mental faculties. By the same principle he can also expand himself to a giant size. By discarding intermediate particles or by absorbing more particles he can reduce or increase his weight. Here are eight advanced Siddhis which can be developed by the practice of Samyama upon the physical constituents of the body. These are:

1. Animana: Power to become small,
2. Mahiman: Power to become large,
3. Laghiman: Power to become light,
4. Gariman: Power to become heavy,

5. Prapti: Power to reach anywhere,
6. Prakamya: Power to acquire anything,
7. Isatva: Power to create anything and
8. Vasitva: Power to command all.

The last four Siddhis are attained when we are able to see the entire material world as consisting only of three attributes-Rajas, Tamas and Sattva, which are, in fact, nothing but combination patterns of vibrations. Similarly our personality and the method of comprehension are also nothing but modulation patterns upon the vibration of our Jivatma. The brain can change vibration patterns by selective resonance and regeneration. It can also generate new vibrations by self-oscillations. Thus with a controlled will-power and the knowledge of different vibration patterns, the Yogi can achiev any transformation in the material world or in our perception and comprehension of the same. He can, for example, produce rain on a hot day or prevent an imminent train collision. He can make a king out of a pauper or bring back to health a sick person declared beyond cure by doctors. These are some of the powers we attribute to God Almighty. The Yogi thus shows Godly powers and becomes God Almighty. This stage of Samadhi or trnace is known as God-realisation.

GOD - REALISATION:

In the systematic practice of Yogic Samadhi, the brain first gets detuned from the superficial patterns of vibrations. These are the sensory inputs, feelings, emotions, memories and thoughts At this stage the brain remains tuned only to the basic Atmic vibration and sees all other perceptions as a modulation upon the Atmic vibration. This is the stage of Self-realisation when we realise our true identity amongst the objects of Prakriti. In the second stage the brain starts detuning also from the Atmic vibration in a controlled manner so that the normal biological functions of the body are maintained by local programmes of the brain. The memories and reasoning can also be brought back through Nirodha Parinama for identifying the cosmic patterns which are received in this stage. When the brain is fully detuned from the Atmic vibration, the Jivatma can be withdrawn and transferred to other bodies while the original body remains in a state of hybernation. The Jivatma is now free to scan the totality of the cosmic spectrum and interact with natural vibrations to produce effects far beyond the normal capacity of ahuman being. The Yogi sees the spectrum as the carrier of

all that exists in the universe and feels competent to alter it any way he feels like. His wish becomes a command for the universe. This is the stage of God-realisation. The Yogi becomes God. He can perform miracles of any kind and of any magnitude.

POINT CONSCIOUSNESS:

When the Jivatma has become free of the resonant bonds of the body and the brain, it can interact freely with other vibrations of the cosmic spectrum. It can always use the mechanism of the brain to demodulate or transfer information from one vibration to another and thereby acqure information from remote areas in space and time without actually moving the body. Such a wandering Jivatma which has a body somewhere as a base of operations but is otherwise free to interact anywhere in the cosmos, is known as point-consciousness. The situation is not very different from the state of deep sleep during which, sometimes the Jivatma gets loose and starts observing events quite far away, or in a different time period, from the sleeping person. Sometime when we wake up we have a strange feeling of having been present at the scene of an event which might actually have taken place somewhere else or may take place sometime later.

Under a controlled trance, when a Yogi allows his Jivatma to act as a point consciousness, he can deliberately steer it to events taking place far and near including those of the past or the future. However, his information is confined to events taking place in our Prakriti, that is, in the frame work of space and time to which we are used to. In technical terms, the Jivatma is able to perceive, by direct perception, cosmic patterns which lie in its own range of frequencies and amplitudes. The Atmic vibration cannot interact with other vibrations if the frequency or amplitude range is quite different. High frequency vibrations carry much more informatin and power. They act as Divine Beings. The energy and information cotnent of a vibration is directly proportional to its frequency. The high frequency vibrations of the cosmic spectrum can carry many Jivatmas as their own modulation and thus govern the life and destiny of a number of living beings.

In order to interact with high frequency vibrations the Yogi can adopt another technique. Suppose he wants to interact with an Atma of a Divine Being which is in a higher frequency range. Using his own

brain or any other suitable mechanism, the Yogi can generate a pure vibration which lies in the higher frequency range very close to the Atma of the Divine being. The frequency can be so adjusted that the difference between the two frequencies lies in the range of Prakriti. When the two vibrations, the Atma of the Divine Being and the locally generated pure vibration meet in the brain mechanism, a vibration with a frequency equal to the difference is generated. This avibration carries all the information contained in the high frequency vibration, restricted to the range of Prakriti. The Yogi can now understand the Divine information in terms of the Prakritic knowledge, that is, in terms of sights and sounds he is familiar with. In other words, the Yogi sees the Divine Beings and their Divine Powers in the shapes and forms of creatures of this world. He can hear Divine sounds as spoken words in his own language coming from the sky. In mythological terms such Divine sounds are called 'Akash Vani'. Similarly the Yogi sees the Divine powers as forms of human or animal figure with several hands or heads depicting the extraordinary powers associated with the figures. These are the visions of Gods and Goddesses which are described so frequently in our mythological literature.

The procedure of getting access to the Divine information and powers contained at very high frequencies is nothing but a process of differentiation. It is a process of defining a small slot in the high frequency range and transferring the information contained in this slot to the Atmic frequency so that we can understand it in terms of our own experience and knowledge. The figures and descriptions we use to explain such Divine phenomena are thus subjective depending upon the knowledge and experience of the person who describes them. The method of differentiation described above is given by Patanjali in the following aphorism:

स्त्वपुरुषान्यतारव्यातिमात्रस्य सर्वभावाधिष्ठातृत्वं
सर्वज्ञातृत्वं च ।

"Sattva-purusanyata-khyati-matrasya
sarva-bhāvadhisthatṛtvaṃ sarvajñātṛtvaṃ ca."

Yoga-Sūtra III-50

(Only from the awareness of the difference between Sattva and Purusa arise supremacy over all states and forms of existence, that is, Omnipotence, and knowledge of everything, that is, Omniscience.)

Ominipresence, Ominipotence and Ominiscience are the powers of being anywhere, doing anything and knowing all, which we generally attribute to God Almighty. A Yogi can attain these powers by the Siddhi of point consciousness. In the form of a point consciousness, there is no difference between the Yogi and God; the Yogi becomes God. After all, God is also defined, in Yogic philosophy, as a special Purusa who is free from the effects of Samskaras and Karmas. A point-consciousness has no bandwidth and therefore, can have no Samskāras and Karmas. See ***Yoga-Sutra I-24:***

क्लेशकर्मविपाकाशयैरामष्टः पुरुषविशेष इश्वरः।

"Kleśa-Karma-vipākāśayair apāāramrṣṭaḥ
puruśa-visesa Iśvarah."

(Isvara is a particular Purusa who is untouched by the afflictions of life, actions and the results and impressions produced by these actions).

TESTS AND OBSTACLES:

According to Indian mythology, God or Isvara is not the ultimate reality or the final goal of learning. The ultimate reality or the Absolute Truth, as we have seen, is Brahman or void. The final goal of the Yogi is also to merge in Brahman and be free of the cycle of briths and deaths. As point consciousness, the Yogi can be present anywhere, learn anything and perfrom any task. He can materialise himself, in his own body or in any other shape, at any palce and time, by merely wishing to be so. In actual mechanics, the patterns of the physical body, present in the Jivatma, can be used to accumulate material particles to fill the form. A fully grown physical body then materialises. The process is the same as in the case of normal birth and growth of a baby. But in this case the material particles are positioned by the will of the Yogi instead of growing by cell multiplication. The governing pattern is always the pattern contained in the Jivatma. The Yogi can also dematerialise the body while retaining the pattern in the Jivatma by his will power. Similarly the Yogi can acquire any knowledge by simply aligning the point-consciousness to the point of the cosmic spectrum where the knowledge is kept. He can perform any task by planting a pattern in the

cosmic spectrum from his Jivatma at any place and time. The planted pattern changes the material environment to meet the wishes of the Yogi.

However, this is not the end of learning. A serious Yogi cannot be satisfied merely by having full powers over the material universe. He should not, indeed, exercise these powers for material gain. If the Yogi gets lost in exercising Godly powers, his path of further progress in blocked. This is the test of his perseverence and will power. In our ancient literature there are numerous stories in which the Supreme God tests the earnestness of His devotes by throwing various kinds of diversions and attractions in his way. If the Yogi uses these powers for greed, pride or attachment, the powers are withdrawn and his path of progress is blocked. In mechanical terms the sligntest greed, pride or attachment built up through Godly powers, will produce resonant bands in the brain. The resonant bonds so built up, colour the mind and prevent it from becoming transparent enough to act as a point-consciousness. The brain becomes unfit to tune to still higher frequencies needed to peep into the ultimate reality. Such a Yogi can never attain salvation or merge with Brahman.

What is the experience of merging in Brahman and how can a Yogi proceed to do so? We shall discuss this is the coming chapter.

CHAPTER XI

THE CONCEPT OF NIRVANA

Nirvana, also known as Kaivalyam or Mukti, is a state of the mind which is completely free from the attachments and bonds of worldly order. The brain has become completely detuned from resonant bonds and self-regenerating vibrations. It is fully transparent and equally sensitive to all patterns. In technical terms it has acquired a flat response over the entire cosmic spectrum with no emphasis or attenuation of its own. A person who has attained Nirvana will have no mental afflictions and will be free from the effect of his earlier Samskaras and Karmas. He can acquire any information or knowledge directly from the cosmic spectrum without any loss or distortion. In fact, he has all the knowlede at his commmand and there is little he needs or wants to know any more. Similarly he has enjoyed all the experiences that this material world can offer and he has no further interest in its attributes. As a Mukta-purusa he has no unfulfilled desires or ambitions. The attractions of this world have lost their significance. He is only interested in maintaining his state of Kaivalya and to this extent the activity of his mind comes to an end. So long as his physical body is alive, the minimum programmes of the brain, needed to keep the body functions going, are maintained. The processing the reasoning power of the brain remains intact. He is quite conscious and alert. But he displays no reaction or interest in his environment. he has no pending objectives or goals. After death, he has no imminent Samskaras or Prarabdha Karmas left to force a rebirth and he is never born again. His soul rests permanently in peaceful bliss, merged in Brahman.

WHY NIRVANA?

What is the use of such a Nirvana? How do we attain this state? What is the mechanism by which we can erase the Sāmskaras and Kārmas so permanently attached to our Jivatma?

Let us take the first question first. What is the use of such a Nirvana? The answer is simple that Nirvana has no earthly use whatsoever. The use of the word 'earthly' is significant. A Mukta-purusa has already detached himself from all earthly attractions and involvements. He would hardly derive any benefit in terms of material possessions or gains. He also has access to all knowledge and is unlikely to find anything new to learn as a result of Nirvana. The mental attitude of a person who has attained Nirvana can be described in seven steps. These are: (i) I know all there is to know, (ii) I possess all I ever needed, (iii) I have no bonds, no attachments, (iv) I have completed all my duties and have no obligations (v) I have no fear, (vi) I have no worries and (vii) I have no doubts.

A person who has reached the degree of enlightenment described above would hardly crave for anything further. He has already fulfilled all his ambitions and achieved all his goals. But he can be a very useful guide for others who are still struggling in the spiritual path or who are completely lost in earthly needs and quarrels and finding things hard for them. In other words an enlightened person is the best philosopher and psychological guide for our mental stresses and strains. He can see the events taking place on the earth as a detached outsider and can analyse them scientifically for those who are emotionally involved in them. He is like a parent sitting in a cinema hall with his young child. The young one is deeply involved in the story and is crying because the heroine is being tortured or is losing his temper because if the activities of the villain. The father figure is sitting undisturbed analysing and critically examining the technique and art of production of the film. The father is confidently able to tell the child to relax; it is after all a transient show, seen within the confines of the cinema hall. The child understands and is pacified. A Mukta Purusa is in exactly the same situation vis-a-vis ordinary humans like us.

We may not be fit or ready for such enlightenment. But the need to have enlightened person in our midst cannot be denied. Few of us are able to achieve Self-realisation; fewer still attain Nirvana and become Mukta - purusas. Once in a while an enlightened person examines life on earth and the social behaviour of humans. With the competence of detached observation that he possesses, he can lay down guidelines for the human race for all times and all occasions. Our Vedas and Puranas

are such guidelines. All the different sects of religions are based on these guidelines. These guidelines are a part of human nature and are hence perpetual. They have stood the test of time for thounsands of years. The scientific theories and the technological principles, on the other hand, have been changing in each century or even in each decade.

In order to interpret this ancient wisdom correctly the interpreter must himself be a person sufficiently advanced in the spiritual path. Othewise he will follow only the letter of the text and lay down dogmas of rituals without any meaning to the layman. Minor differences in such rituals would then fragment the society on the basis of religion, as is happening today. More than ever before, today we are in need of enlightened persons who, without any self-interest, can guide the polity of social behaviour.

ATTAINING NIRVANA:

Next let us examine the question how we can attain Nirvana and what is the mechanism by which we can wipe out the Saskaras and karmas still present in our Jivatma. In other words how do we clean up the modulations which have been formed upon the pure vibration of Atma. We have seen that a vibration, once modulated, retains its modulation perpetually unit it is deleberately neutralised. Consider, for example, the case of a radio wave carrying the TV telecast of a cricket match. The wave may be transmitted over a satellite to remote parts of the earth. A part of the wave may proceed from the satellite to some other planet, get reflected, and return to earth after several days. If we now receive the wave, it will still carry the telecast of the cricket match, exactly as when it was first modulated. The modulation does not go. It becomes a part of the wave form and cannot be detached from it. The only way to make the wave a pure vibration again, is to re-modulate it with an exactly equal and opposite signalso that the resultant is zero and the modulation is neutralised.

In the normal course, the modulations which are formed upon the Atmic vibration appear as the Samskaras and Karmas of the Jivatma. When Jivatma takes a birth, the sensory inputs received from the body and the brain interact wih the modulations already present in the Jivatma and give experiences of pleasure and pain to the living being.

In this process of interaction some of the modulations are neutralised but some new ones are formed at the same time. The new ones again need to be neutralised during the same birth or in subsequent births. So long as a balance of Samskaras and Karmas remains on the Jivatma, the cycle of births and deaths continues. If, by deliberate attempt or by chance, the balance of Samskaras and Karmas is reduced in any birth, this Jivatma is born again only to neutralise the residual balance. It is practically a pure vibration. Such a person is a born Yogi. He has a clear vision, practically no self-interest, and either already posseses Yogic Siddhis or can acquire them with ease. He is usually regarded as a God incarnation. Unless he involved himself in worldly affairs once again, his life span is usually the last one and he attains Nirvana when he dies. He is never born again.

The practice of Yoga, as defined in Yoga-Sutras or in Bhagvad Geeta, is an attempt to deliberately reduce the balance of Samskaras and Karmas in the current life in order to achieve a saintly birth in the next life. This could well be the terminal birth preceding Nirvana or one more life span may be needed. In the extreme fortunate cases one may be able to wipe out all the Samskaras and Karmas even in the current life and become a Mukta-purusa before death. The Yogic attempt to reduce Samskaras and Karmas is directed in a two pronged attack. Firstly we must not accumulate new Samskaras and Karmas. Secondly we must try to neutralise those already existing upon our Jivatma. The guidelines given in the first two components of Yoga-Yama and Nyama prevent new impressions being formed upont he Jivatma. Neutralising the existing impressions is somewhat more difficult. The guideline is to form impressions exactly equal and opposite to the ones already formed. Let us see how this can be done.

NEUTRALISING SAMSKARAS:

In order to find a means of neutralising existing Samskaras and Karmas we must first understand the principle by which these are initially formed. In the Yoga-Sutra of Patanjali the principle and the remedy are described in section II-aphorisms 16 to 26. In short, Patanjali says that all misery in life is created by the junction of the 'seer' and the 'seen', The 'seer' is the Pursa, who is, by nature, pure consciousness. He can appraise Prakriti but cannot react to it. It is due to the Prataya in the mind that experience and reaction starts. Prataya

is the reverberation in the brain due to which the perception produced by Indriyas is impressed upont he Purusa. Sense impressions are the combinations of Rajas, Tamas and Sattva picked up by the 'Indriyas' from Prakriti. Once these impressions are formed upon the pure Atma, they become the purpose for which the Purusa takes birth. Prakriti then exists, limited to the scope of these impressions, for the sake of releasing the Purusa of these impressions. These impressions are the Samskaras and Karmas. For a Mukta-Purusa, in whose case the impressions have been removed, Prakriti vanishes, though it continues to exist for the other ordinary Purusas. The power of the Purusa to take a physical birth, acquire a brain and sense organs, and react to Prakriti, is derived from the junction of the Atmic vibration with the patterns of the sensory inputs. At the junction point in the brain, it is the non-linearity of the nerve cells which produces modulation of impressions, one over the other, and finally upon the Atmic vibration. It is also this non-linearity, or limited one-sided vision, which originally produces a manifested universe out of the ever unmanifest void. We have called it 'Avidya' or incomplete perception. So Avidya is the cause of experience at the point of junction. Remove the junction, remove Avidya, and the Purusa wil become pure again. That is Kaivalya according to Patanjali.

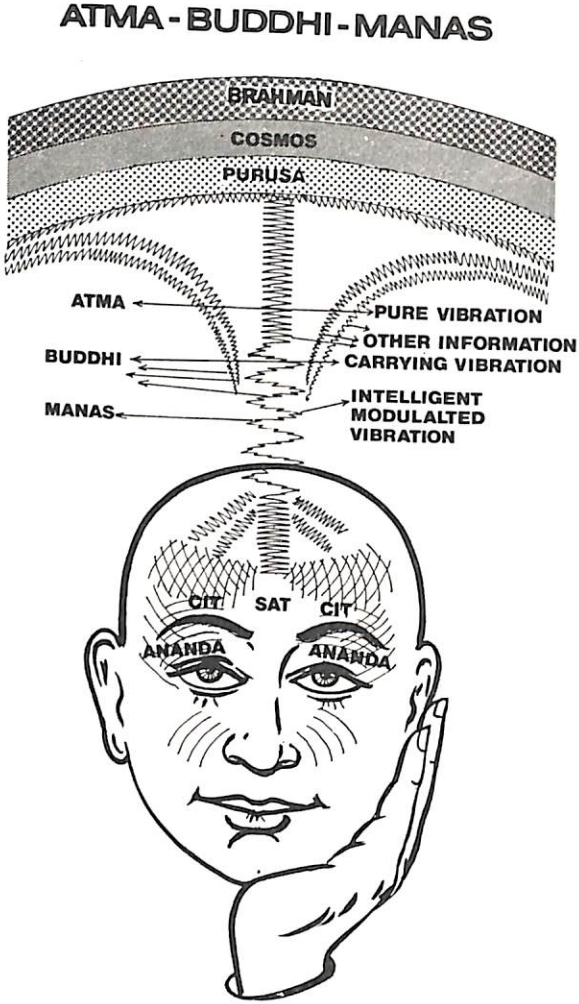
So long as we have a physical body and a brain, we cannot remove that junction point where the Atmic vibration meets the sensory inputs. However, we can avoid modulation to some extent by avoiding reverberation in the brain. We notice this reverberation in the form of a feeling or emotion. If we could appraise our environment without getting emotionally involved in it, we can avoid forming permanent impressions upon our soul. The events would then come and go without leaving any lasting memory in our mind and hence no Samskaras or Karmas would accumulate. Samskaras are memory patterns of our previous births while Karmas are action patterns. To avoid accumulation of Karmas we must similarly isolate our actions from emotional involvement. Since, as living beings we must perform some action or another, we must ensure that our actions are only in the shape of performing essential duty and do not involve us in desires or emotions. In other words, our actions should be without any personal motive or expectation or reward. That is what Bhagvad Geeta teahces us. While Karma cannot be avoided, all our Karmas should be Niskama, that is, without any desire for fruit.

TAPA AND SVADHYAY:

The first and foremost principle of Raja-Yoga is 'Vairagya' or the practice of detachment. One has to practice Vairagya to the extent that it becomes a habit and no desire is built up by any object, seen or heard. Vairagya followed by the practice of Yama and Niyama then establishes a foundation by which the Atma becomes immune from collecting new Samskaras and Karmas. But what about the ones it already carries? These have to be neutralised by opposite actions and opposite thoughts. In the normal course the Atma directs the physical body to undergo experiences which tend to neutralise old impression. Impressions of good deeds lead to happy experiences; those of bad deeds lead to pain and misery. In either case experiences undergone as a result of inner instincts always lead to neutralising old impressions. Provided new impressions are not made, this process will eventually lead to Nirvana when the balance of impressions comes to zero. But this process may take a very long time-several life spans in most cases. The practice of Yoga shortens this period and one may be able to attain Nirvana in the current life itself.

The process of neutralising old impressions already formed upon the Atma can be expedited by artificial deeds specifically directed to oppose the worldly desires and pleasures. The desires of the body for good food can be opposed by fasting or taking only essential balanced diet; no tasty spices or intoxicants. The desire for comfort and leisure is opposed by using a stiff wooden bed to sleep (typically a bed of thorns or nails) and taking an early morning cold bath. Similarly greed for possessions is opposed by charity and giving away the most valued posessions. All such austerities come under the general classification of 'Tapa'. Highly specialised austerities for specific objectives have been prescribed in the Vedas and are proclaimed by knowledgeable (and not so knowledgeable) Sadhus who undertake to perform these for some consideration. This has sometimes led to the misuse and degeneration of our ancient wisdom.

The Yogic process of introspection, Svadhyaya is another method of removing old impressions from the Atma. By meditation upon the Self, the ego is enhanced. The amplitude of the Atmic vibration is increased while the modulating impressions remain at the same level.



Atma - Buddhi - Manas

The eternal form of intelligent life which survives death of the body and uses different bodies in the cycle of births and deaths, is the combination of Atma-Buddhi-Manas. Atma is a pure vibration of the cosmic spectrum which fixes the individualilty of a soul as distinct from millions of others. As a result of successive births, other information carrying vibrations start riding upon the Atma. The power to demodulate and decipher this information is the Buddhi. The information itself is the collection of Samskaras and Karmas acquired during different births and forms the Manas. The three together, Atma-Buddhi-Manas, form the soul or Jivatma. When a soul acquires a physical body and a brain, it is able to separate, from the pure vibration (SAT), the information it carries (CIT) and use it to mach the sensory inputs (ANANDA). The combination of the soul and the body is JIVA which lasts only for one lifetime.

Correspondingly therefore, the impressions become muchweaker compared to the Atmic vibration. By repeated practice of Svadhyaya the impressions can be made so weak that their influence becomes negligible and the Atmic vibration becomes allmost pure. At this stage one sees the Divine in oneself and thus establishes communication with one's Diety.

INCREASING DISCRIMINATION:

The ultimate goal of removing all worldly bonds and finally crossing the space-time barrier to merge in Brahman lies in increasing one's power of discrimination. Patanjali says:

विवेकख्यातिरविप्लवा हानोपायः ।

"Viveka-khyātir aviplavā hānopāyaḥ."

Yoga-Sūtra II-26

(Discrimination practiced continuously is the means of warding off.)

In this case the attempt is to ward off Avidya and Samyoga, that is, the junction of Gunas and Vritti. By increasing discrimination the brain is able to tune successively to higher and higher frequencies of vibrations. As we move from the Physical plane to the mental plane, and from the mental plane to the Atmic plane, we increase our power of discrimination. Tuning the brain to higher frequencies removes the resonant bonds of lower frequencies. It also gives higher resolution to our perception. Resolution is the capacity of the brain to distinguish between two very similar situations. The higher the resolution of the brain, the better is our power of discrimination. At the stage of Self-realiation the resolution is equal to the frequency of the Atma, that is, we can discriminate between individual pulses of the Atmic vibration. When we have achieved God-realisation, the discrimination is much higher, discriminating between individual pulses which make up the cosmos. The manifested cosmos, emerging out of void, is now seen to consist of individual pulses appearing and disappearing at short intervals. This interval is the shortest period of time. It is known as 'Ksana' or the smallest quantum of time. Time gets quantified. The universe appears and disappears every moment. There is Sristi (manifestation) for one Ksana followed by Pralaya (dissolution) the following Ksana.

The continuous events of life are broken into successive pictures appearing and disapparing in quick succession, much like what we see in a cinema hall. There is a period of darkness in between. It is this period of darkness which relates to Void, the ultimate reality. Once we are able to increase the frequency of tuning to the extent that the brain stablises in the period of darkness. The duration of that Ksana, when the cosmos has vanished and before the next manifestation takes place, we are in void; we have seen the ultimate reality or the absolute truth. We have seen Brahman.

BRIDGING THE PULSES OF MANIFESTATION:

When we have increased our discrimination to the extent that we can identify individual pulses emerging from void which produce the manifestation of the universe, we are close to the stage of attaining perpetual Nirvana. The first thing to notice is that the pulses, by themselves, are absolutely pure. They do not carry any perception or emotions. It is the inertia of our brain which drags the pulses to merge into one another and then produce pereptible image. When pulses of different amplitudes are bridged together, they form a resultant envelop which is a low frequency signals at which our brain can resonate. The resonance then gives the brain a sensation which we perceive as an impression: sight, sound etc. If we bridge them at a different rate, we would select different pulses and would form a different impression. Thus the view of Prakriti that we perceive does not exist by itself any where, it is made by our own brain by selective bridging of pulses. This is the basis of Avidya and the root cause of Maya. Once we are able to recognize this mechanism, our belief and involvement in the illusion of Maya automatically goes. We are then able to see things in their true perspective and discriminate between reality and false illusion. We are now on the path of Nirvana.

KAIVALYAM:

The method of increasing discrimination described above brings us face to face with the real cause of pereption. If we can remove this cause, all impressions formed on the Atmic vibration due to this cause can be neutralised. Then all the Samskara and Karmas are wiped out in one stroke and there will be no need for successive births and deaths. As we

have seen, the impressions formed upon the Atmic vibration are nothing but the undulations resulting from bridging selective pulses of uneven amplitude. Since the Atmic frequency is lower than the frequency (bit rate) of manifestation, selection of isolated pulses cannot be avoided. But if the selected pulses were of the same amplitude then the envelop will be flat and no impression will be formed by bridging them. This is what the brain can do. We can, by practice, make the brain insensitive to varying amplitudes. We do so in a noisy class room when we try to understand what the teacher is saying in the midst of background noise. Once the brain gets tuned to a fixed threshold, it cuts all the pulses to the same size. After that the pulses can be bridged at any frequency but the resultant will always be a straight line, that is, an envelope which carries no impression. No Samskaras will then remain upon the Atmic vibration and Nirvana would be attained. Patanjali describes the ultimate step in attaining Kaivalya as follows:

सत्त्वपुरुषयोः शुद्धिसाम्ये कैवल्यम् ।

"Sattva-puruṣayoḥ śuddhi-sāmye kaivlyam."

Yoga-sūtra III-56

(Kaivalyam is attained when there is equality in point between Purusa and Sattva.)

When Nirvana or Kaivalya has been attained the person gets free of the bonds of Samskaras and Karmas. He has acquired all the knowledge and there is nothing to know. The involvement of his mind due to the transformation of Gunas comes to an end. The successive manifestation of pulses from void are clearly in his view. He can ignore them or bridge them as he likes to perceive and interpret anything of his choice. The entire universe is at his command; to appar or disappear as he likes. He has no involvement or bondage whatsoever. In fact, the Citta-vritti which is the power of the mind to produce perception is now finished and is within his full control. He is a person completely free and in perpetual bliss. He knows all; he possesses all. He has no bonds; no obligations. He has no fear, no worry, no doubt.

CHAPTER XII

SOME SELECTED APHORISMS

THE GAYATRI MANTRA:

The Gayatri Mantra runs as follows:

ओऽम्
भूर्भुवः स्वः ।
तत्
सवितुर्वरेण्यम् भर्गो देवस्य
धीमहि ।
धियो यो नः प्रचोदयात ।

OM
Bhur, Bhuvah, Svah,
TAT
Savitur Varenyam Bhargo Devasya
Dhimahi
Dhiyo Yo Nah Prachodayat.

A simple translation on the basic of the concepts described in this book can be attempted as follows:

O! the source of all creation
Manifesting through our senses, emotions and intellect
You are THAT
Wonderful infinite spectrum of Cosmic radiation
Upon which let us meditate
To enhance our consciousness to understand the total reality.

The Gayatri Mantra embodies, in a nutshell, all that I have covered in this book. Starting with a description and the cause of manifestation, it ends with a prayer to remove the ignorance and enable the aspirant to understand and merge in the ultimate reality. Let us analyse the Mantra in some more detail.

OM, (A-U-M):

The first word, OM or AUM is a symbolic representation of the manifested universe enclosed in our mind. The sound of OM, pronounced as AUM, starts with 'A' with the mouth fully open as if gaping with awe. It represents the totality of manifestation, with all its beauty and colour, which we see around us with delight and wonder. Gradually, as we close the mouth with the sound of 'O' we enclose this totality in a limited sphere symbolising that this universe of our senses and intellect is a limited version of the totality, confined due to our ignorance . Finally when we close the mouth to produce the sound of 'M', we recognize the fact that this limited perception of reality is entirely in our own mind and have no objective existence outside of us.

OM, designated in Sanskrit by the word, 'PRANAV', is the most profound sound of our scriptures which suddenly pulls us away from the attraction of sights and sounds and directs us inwards to realise this creation and its creater within ourselves. OM is the first word of any prayer and is repeated again and again in all Hindu rites.

BHUR, BHUVAH, SVAH:

The three words, 'Bhur', 'Bhuvah' and 'Svah' represent the three ways in which we perceive this universe. They have been variously described as the three faces of God: 'Trimurty' Barhmahan Vishnu and Mahesh, or the three Lokas : Prithvi, Patala and Akasha. However the most logical description I have come across is that they define the three planes of our consciousness in which we perceive the universe. The three planes are the physical, the Astral and the Mental. In the physical plane we perceive the material side of the universe; what we absorb through our sense organs: the sights, the sounds, the smells, the tastes and the feelings of touch. 'Bhur' is the material universe perceived through senses, extended by the use of scientific instruments or by testimony of others or by reading. 'Bhuvah' (from Bhavana) is the emotional side of the universe. It is our reaction to the sensory perception - our appreciation of what we see or hear, taste or smell: beautiful or ugly, pleasant or painful, hot or cold, etc. It is the subjective aspect of total existence, personal to us. It embodies our emotions of love, hate, anger, greed, attachment or pride. Our perception is closely associated

with our emotions and our description of what we perceive is an expression of these emotions. Finally the word 'Svah' represents the intellectual aspect of our perception. It is the scientific description, based upon logic of cause and effect, which we have developed in our mental plane. "The red glow of the rising sun is the refracted light of the lower band which reaches us over the curvature of the earth a little ahead of the direct beam". It is our explanation of what we see rather than our appreciation. 'Svah' is the universe of intellect which is entirely in our mind, but which is common to all intellectuals whose minds have been trained under the common discipline of modern science.

The three aspects, Bhur, Bhuvah and Svah, cover the totality of our perception; there is nothing else; nothing outside of these three images.

TAT:

'Tat' meaning 'That' symbolises the source of all creation which is manifesting through our senses, emotions and intellect. It is the giver, or the vivifier of all material, all life and all thought. It refers to the Sun, for the sun is the source of all energy and all intelligent life on earth. The manifested universe is made up of information and energy: SIVA and SAKTI: both of which we derive through the cosmic radiation received from the sun. A person who is Self - realised and who has attained God-realisation finds that this light is in him only and he, himself is the source of this light. Then we refer to him as 'TAT'. "Tat-tvam-asi"; you are THAT.

SAVITUR VARENYAM BHARGO DEVASYA:

'Savita' is Sun or the Lord of our solar system. 'Varenyam; is adorable or most excellent. 'Bhargo Devasya' is Divine light or the light of our inner consciousness. The whole expression is in praise of the Sun. It describes the Sun as that adorable, effulgence of the resplendent Vivifier of the Universe, Savita. In scientific terms, if we accept that the information and energy defining this universe is contained in the cosmic radiation, it becomes THAT wonderful and infinite spectrum of cosmic radiation which is the source of all perception, subjective and objective, in which the knower, the known and the knowledge are all

embodied as one. Our individual consciousness is a channel of this spectrum, a channel limited in its range of frequencies and amplitudes. What we can perceive of the total spectrum is what we can accommodate in this channel by transfer of information from lower part of the spectrum (Prakriti) to the high frequency band, that is our consciousness. If we can expand this band, we can increase our individual consciousness, till it embodies the whole spectrum. Then truly we realize God. The Gayatri Mantra is prayer to achieve this end..

DHIMAHI:

'Dhimahi' literally means 'We meditate upon' or 'May we meditate upon'. It is the 'Savita' or the Lord of the Solar system upon which we attempt to meditate. Medtation, as we have seen, leads to a state of trance under which we can detune our brain from the resonant bonds and thus make it free or tune to higher and higher frequencies. By meditation upon the totality of the spectrum we tend to expand the bandwidth of our individual consciousness.

DHIYO YO NAH PRACHODAYAT:

Literal meaning: 'May He illuminate our intellects upto the right path'. 'Prachodayat' is the process of unfolding or opening up. 'Dhiyo' is the individual consciousness. 'Yo Nah' menas 'ours'. The expression is, therefore, the result of meditating upon the Savita which brings about the expansion of our own consciousness so the universal consciousness may unfold into it.

Thus we see that the Gayatri Mantra is a prayer to the God Almighty to unfold His infinite and wonderful form so we could go beyond the limitation or our senses; emotions and intellect. This Mantra is recommended to be chanted particularly when one is mentally tense, afraid or worried. It enables one to get out of the vertigo in which the brain has been trapped. It is also a very popular Mantra to be chanted in chorus or individually as a regular routine for keeping mental pose and balance at all times. Finally it is the Mantra the chanting of which gradually eliminates Avidya and leads to Nirvana.

THE REALITY - BHAGVAD GITA:

Here are some selected aphorisms from the Bhagvad Gita which throw light on he concepts described in this book.

ओमित्येकाक्षरं ब्रह्म व्याहरन, मामनुस्मरन ।
यः प्रयाति व्यजन्देहं, स याति परमांगतिम ।

aum ity ekaksaram brahma vyaharan mam anusmaran
yah prayati tyajan deham sayati paramam gatim

VIII-13

"Aum!" the one-syllabled Brahma, reciting, thinking
upon Me, he who goeth forth, abandoning the body,
he goeth on the highest path.

VIII-13

(Translations by Annie Besant and Bhagavan Das)

Like the Gayatri Mantra, Geeta also designates the ultimate reality, Brahma, by the three-lettered, one-syllabled word 'AUM'. Chanting of Aum leads to the highest spiritual path. The sound of Aum, repeated mentally, sweeps out all the resonant bonds in the mind, breaks the linkage of the nerve cells which trap Prakritic vibration, and makes the brain transparent to receive and tune to the highest vibrations of the cosmos.

अव्यक्ताद्व्यक्तयः सर्वाः प्रभवन्त्यहरागमे ।
रात्र्यागमे प्रलीयन्ते तत्रैवाव्ययक्तसंजके ।

avyaaktad vyaktayah sarvah prabhavanty aharaagame
ratryagame praliyante tatrai va vyaktasamjnake

"From the Unmanifested all the manifested stream
forth at coming of day; at coming of night they
dissolve, even in That called the unmanifested."

VIII - 18

This aphorism describes the sucessive pulses emerging from the ever unmanifest, void, into the realm of manifestation due to our space time limitation. The bridging of these pulses at different rates of selelction projects the different aspects or faces of Prakriti. In between

the pulses there is darkness, the reality of void. The successive projections, at the time intervals of one Ksana each, are the days and nights of Sristi and Pralaya. A Mukta Purusa, who is able to discriminate between intervals of individual Ksanas, can see the events of the universe as a cinema show without getting attached or involved into proceedings.

श्रीभगवानुवाच ।
अक्षर बह्म परमं, स्वभावोडध्यात्मुच्यते ।
भूतभावोद्भवकरो विसर्गः कर्मसंज्ञितः ।

Sribhagavan uvaca
Aksaram brahma paramam svabhavo dhyatmam ucyate,
bhutabhavodbhavakaro visargah karmasamjnitah.

(viii -3)

अधिभूतम क्षरो भावः, पुरुषचाधिदेवेतम ।
अधियज्ञोडह्मेवात्र देहे, हेहभृतां वर ।

Adhibhutam ksaro bhavah purusas ca dhidaivatam,
adhiyajno ham eva tra dehe dehabhrtam vara.

(viii - 4)

The Blessed Lord said:

"The indestructible, the Supreme, is the Eternal;
His essential nature is called Self-knowledge;
the emanation that causes birth of beings
is called Action".

"Knowledge of Elements concerns My perishable nature,
and knowledge of the Shining Ones Concerns life-giving energy;
Knowledge of the Sacrifice tells of Me,
as wearing of the body, O best of living beings."

VII 3,4

Here Lord Krishna describes how the Supreme Brahma, from His eternal Nirguna form, takes a finite Saguna form, so that we may Know Him. Knowing Self is knowing Brahma, the manifested cosmic spectrum. The art of knowing involves transfer of information from one part of the spectrum to another; from Prakriti to Purusa. Action involves the reverse process. The non-linear brain accomplishes this process. Hence in order to Act upon the cosmic spectrum, one must take a physical birth and acquire a brain. Once born, the Siva and Sakti parts of the spectrum get seperated and manifest as mind and matter.

The transient part is the interaction of vibrations producing the three Gunas and the five elements which make up the Prakriti; the permanent part is the Purusa, the knower and the actor. By sacrificing Prakriti, the Purusa is freed and merges in the eternal Brahman.

"He who acteth, placing all actions in the Eternal,
abandoning attachment, is unaffected by sin
as a lotus leaf by water."

"Yogins, having abandoned attachement,
perform action only by body,
by mind, by reason, and even by senses,
for purification of the Self."

ब्रह्ण्याधाय कर्माणि संग्ड़ त्यक्त्वा करोति यः ।
लिप्यते न स पापेन पद्यपत्रमिवाभ्भ्सा ।

Brahmany adhaya karmani sangam tyaktva kaeroti yah
lipyate na sa papena padmapattram iva mbhasa

(v - 10)

कायेन मनसा बुद्धया, केवलैरिन्द्रियैरपि ।
योगिनः कर्म कुर्वन्ति, संग्ड़ त्यक्त्वात्मशुद्धये ।

Kayenna manasa buddya kevalair indriyair api,
yoginah marma kurvanti sangam tyaktva tmasuddhaye.

(v-11)

युक्तः कर्मफलं व्यक्त्वा शान्तिमाप्रोति नैष्ठिकीम ।
अयुक्तः कामकारेण फले सक्तों निबध्यते ।

Yuktah karmaphalam tyaktva santim apnoti naisthikim,
ayuktah kamakarena phale sakto nibadhyate.

(V -12)

"The harmonised man, havingabandoned the fruit of action,
attaineth to eternal peace;
the non-harmonised one impelled by desire
attached to fruit, is bound"

V-10,11,12

Having been born with a brain and a physical body, we have to perform action upon the cosmic spectrum. Action cannot be avoided. Then how do we abandon Prakriti? The question is answered in Geeta in the above aphorisms. While Karma or Action cannot be avoided, the desire for the fruit of action can be abandoned. The key word is 'Niskama Karma'. By performing action as duty without any personal attachment or desire for gain one can keep on the spiritual path while still living in Prakriti and participating in its affairs. Lord Krishna said:

"There is nothing in the three worlds, O Partha!,
that should be done by Me, nor anything unattained
that might be attained;
yet I mingle in action."

"For if I mingled not ever in action,
unwearied, men all around follow My path,
O son of Partha!"

"These words would fall into ruin,
if I did not perform action;
I should be the author of confusion of castes,
and should destroy these people."

III - 22, 23, 24

यदि ह्महं न वर्तेयं जातु कर्मण्ययतन्द्रितः ।
मम वर्त्मानुवर्तन्ते मनुष्याः पार्थ सर्वशः ।

Yadi hy aham na varteyam jatu karmany atandritah,
mama vartma 'nuvartante manusyah partha sarvasah.

(iii- 23)

उत्सीदेयुरिमे लोका न कुर्यां कर्म चेदहम ।
संकरस्य च कर्ता स्यां, उपहन्यामिमा : प्रजाः ।

Utsideyurime loka na kuryam karma ced aham,
samkarasya ca karta syam upahanyam imah prajah.

(iii - 24)

AVIDYA PATANJALI:

Given below are a few selected aphorisms from Patanjali's Yoga Sutras. They describe the cause and remedy of Samskaras. Translations are by Dr I.K.Taimni.

After Saying that all misery is due to the interaction of our Samskaras with the pereption produced by the sense organs, Patanjali says:

हेयं दुःखमनागतम्

"Heyaṃ duhkḥam anāgatam."

II-16

(The misery which has not yet come, must be avoided.)

द्रष्टृदृश्ययोः संयोगो हेयहेतुः ।

"Ddraṣṭṛ-dṛśyayoḥ samyogo heya-hetuh"

II-17

(The seer is pure intelligence, but though pure, sees through the colouring of the intellect.)

तदर्थ एव दृश्यस्यात्मा ।

"Tadartha eva dṛśyasyātmā."

II-21

(The nature of what is seen depends upon the type of colouring of the intellect.)

कृतार्थं प्रति नष्टमप्यन्ष्टं तदन्यासाधारणत्वात ।

"kṛtarīham prati nastam apy anaṣṭam
tad - anya- sādhāranatvāt

II-22

(The view is destroyed for him whose colouring has been removed, yet it is not destroyed, being common to others.)

स्वस्वामिशकत्योः स्वरुपोपलब्धिहेतुः संयोगः ।

"Sva-svami sakyoḥ svarūpopalabdhi-hetuḥ saṃyogaḥ.

II-23

(Junction is the cause of the recognition of the self as distinct from the Purusa.)

तस्य हेतुरविद्या ।

"Tasya hetur avidyā."

II-24

(The cause of junction is avidya.)

तदभावात्संयोगाभावो हानं तद् दृशेः कैवल्यम् ।

"Tad-abhāvat samyogāthvo hanam tad dṛśeh kaivalyam."

II-25

(If avidya is removed and the junction is broken then misery is warded off and kaivalya attined.)

विवेकख्यातिरविपल्वा हानोपायः ।

"Viveka-khātir viplavā hānopāyaḥ."

II-26

(Discrimination practiced continuously is the means of warding off.)

Patanjali has described beautifully how the three Gunas, of Prakriti; Rajas, Tamas and Sattva, produce a Drisya or view in the mind of the seer. When these Gunas are impressed upon the consciousness of the seer, the consciousness is no longer pure but carries the Prataya along with it. The seer is now bound to take birth and interact with Prakriti. Without this impression the Prakriti will vanish. The impression is formed at the junction of the seer and the seen. The cause of this formation is Avidya. Now here we have to revert to the theroy of communication and the principle of modulation. The junction between the seer and the seen is obviously the brain. Avidya means an incomplete view which is equivalent to the non-linearity of the brain. The brain cells can pass impulses in one direction but not in the other. This non-linearity produces the phenomenon upon the consciousness of the seer by the process of modulation. If the junction is removed and the Avidya is removed, all previous impressions are erased. Then the seer will attain kaivalya. Detachment and discrimination are the practical means of doing so.

THE UPANISHADS - THE SELF AND BRAHMAN:

(Translations by Swami Prabhavananda and Fredrick Manchester)

"That in which the sun rises and in which it sets,
that which is the source of all the powers of nature
and of the senses, that which nothing can transcend,
that is the immortal Self."

"What is within us is also without.
What is without is also within."

--*Katha Upanishad*

Here the immortal Self is Brahman. For one who has attained Nirvana, Self merges into Brahman and becomes Brahman. Hence we can seek this universe within ourselves.

"O Brahman Supreme,
Formless art thou, and yet
(Though the reason none knows)
Thou bringest forth many forms;
Thou bringest them forth, and then
Withdrawest them to thyself.
Fill us with the thoughts of thee."

"The Lord upholds the Universe, which is a union of
the manifest and the unmanifest,
the imperishable and the perishable.
Functioning as Enjoyer through the senses,
the soul in man loses the consciousness of lordship
and is enchained.
When he realises lordship,
he is freed from every tie.
Let man realise the Divinity of his soul.
Thereby does he obtain Release."

- *Svetasvatar Upanishad*

This is a definition of Avidya and shows how bonds are formed by attachment.

"That is whole, and this is whole;
The perfect has come out of the perfect;
Yet the perfect remains, as before, perfect."

Isha Upanishad

This is a definition of the infinite manifested universe having emerged out of the infinite ever unmanifest, yet leaving the unmanifest infinite as before. A prallel is a radio wave carrying a programme and music. Millions of people receive the programme and listen to the speech and music. Yet the wave remains intact and still carries and programme in toto.

"Man is composed of such elements as vital breath,
deeds, thoughts, and the senses-
all of them deriving their being from the Self.
They have come out of the Self, and in the Self
they will ultimately disappear-
even as the waters of a river disappear in the sea."

Prasna Upanishad

"Know that the Self is the rider, and the body the chariot;
that the intellect is the charioteer, and the mind the reins.
The senses, say the wise, are the horses;
the roads they travel are the mazes of desire.
The wise call the Self and enjoyer
when he is united with the body, the senses and the mind."

Katha Upanishad

"Above the senses is the mind.
Above the mind is the intellect.
Above the intellect is the ego.
Above the ego is the unmanifested seed,
the Primal Cause."

Katha Upanishad

The above aphorisms describe the mechanism of perception and the planes of consciousness as discussed in this book.

VEDAS - THE BEGINNING:

(Translation by Pandit Satyakam Vidyalankar
-- from the Holi Vedas.)

पूर्णः कुम्भोऽधिं काल आहितस्तं वै पश्यामो
बहुधा नु सन्तः ।
स इमा विश्वा भुवंनानि प्रत्यङ्कालं तमाहुः
परमे व्योमन् ।
यो विश्ववर्षणिरुत विश्वतोंमुखो यो
विश्वतस्याणिस्त विश्वतस्पृथः ।
सं बाहुभ्यां भरति सं पतत्रैर्द्यावपृथिवी
जनयन् देव सकंः ।

"The whole of this Universe
Is stationed in the Ominipresent
And the Omnipotent God.
We see Him in various forms.
He brings to light
All these worlds.
Him they call the Kala, Infinite,
Pervading the infinie space."

Aartharva 19.53.3

हिरण्यगर्भः समवर्तताग्रे भूतस्य जातः
पतिरेक आसीत ।
स दाधार पृथिवीं द्यामुतेमां कस्मै देवाय
हाविषा विधेम ।

"In the beginning was Hiranyagarbha (Golden Womb)
The seeds of elemental existance,
The only Lord of all that was born.
He upheld the heaven and earth together
To what God other than Him, could we
dedicate our life?"

Atharva. 4.2.7

नासदासीन्नो सदासीत तदनीं नासीद्रजो नो व्योमा परोयत्
किमावरीबः कुह कस्य शर्म बमयः किमासद्रिहनं गंभीरम्
न मृत्युरासीदमृतं न तर्हि न रात्रया अह्न आसीत प्रकेतः
आनीदवातं स्वधया तदेकं तस्माद्धान्यत्र परः किं चनास
तम आसीत तमसा गूहमग्रे ऽप्रकेतं सलिलं सर्वमा इदम्
तुच्छ्येनाभ्वपिहितं यदासीत तपसस्तन्महिनाजायतैकम् ।

"In the beginning there was darkness,
Intensified darkness, indistinguishable darkness,
All this visible world was reduced to its primordial nature.
This prmordial world which was enveloped
by the All-pervading power of one
Before whom the world of matter is a trifle
became One (that is, came into existence)
Through the force of His intensee activity
and spiritual fervour." *Rig 10.129.3*

कामस्तदग्रे समवर्तताधि मंनसो रेतः
प्रथम यहासीत
सतो बन्धुमसति निशविन्दन हृदि प्रतीष्या
कवयो मनीषा ।
तिरश्चीनो विततो रश्मिरेषा मद्यः स्विहासीऽदुपरि
स्विदासीऽत्
रेतोधा आसन महिमान आसन त्स्वधा अवस्तात
प्रयतिः परस्तात

"In the beginning the Divine Will arose.
This was the first seed of the mind of the Creater.
Those who can see beyond
by putting their mind and heart together
Found the binding link of the existence
in the non-existent,
The non existent existing in the existent"

"The rays of the Divine Will spread across the whole world.
They spread below and above
And the result was that small and big organisms
bearing seeds were born.

As the existence of Earth was dependent
on the Divine Will of the Creater,
The position of matter was lower then the spirit
which acted with the Divine Will."

Rig. 10.129.4,5

The Holy Vedas describe the manifestation of this universe from the ever unmanifest darkness by the will of the Creater. The Divine Will sets up the spirit of man. The spirit, in turn, defines the matter it perceives. As we have seen the process of manifestation is the result of the space time limitation of our perception. This limitation or Avidya is also the cuase of our existence and our perception. So, in a devotional mood, we say that He willed that man should suffer from Avidya and thereby set up the framework of Purusa and Prakriti.

THE GUNAS - BHAGVAD GITA:

(Translation by Annie Besant and Bhagavan Das)

सत्त्वं रजस्तम इति गुणाः प्रकृतिसंभवाः ।
निबंधन्ति, महाबाहो देहे देहिनमव्ययम
sattvaṁ rajas tama iti guṇāḥ prakrtisaṁbhavāḥ
nibandhnanti mahābāho dehe dehinam avyayaṁ

"Harmony, Mobility, Inertia, such are the qualities,
Matter-born; they bind fast in the body
O great armed one!, the destructible
dweller in the body."

XIV-5

सच्चात्संजायते ज्ञानं रजसो लोभ एव च ।
प्रमादमोहौ तमसो भवतोऽज्ञानमेव च ।

sattvāt samjāyate jnañaṁ rajaso lobha eva ca,
pramādamohau tamaso bhavato "jñānam eva ca.

"From Intelligence wisdom is born, and greed from
Mobility; headlessness and delusion are from Inertia,
and also unwisdom."

XIV 17

सत्त्वं सुखे सञ्जयति रजः कर्मणि भारत ।
ज्ञानमावृत्य तु तमः प्रमादे सञ्जयत्युत ।

sattvam sukhe sañjayati rajaḥ kārmaṇi bharata,
jñanām āvrtya tu tamah pramāde sañjayaty uta

"Intellect attacheth to bliss, Mobility to action,
O bharata! Inertia, verily having shrouded wisdom,
attacheth on the contrary to heedlessness."

XIV-9

सर्वद्वारेषु देहेऽस्मिन् प्रकाश उपजायते ।
ज्ञानं यदा तदा विद्याद्विवृद्धं सत्त्वमित्युत ।

sarvadvāresu dehe smin prakāsa upajāyate,
jñanām yadā tada vidyad vivrddham sāttvam ity uta·

"When wisdom-light streameth forth from all the gates
of this body, then it may be known that
Intelligence is increased."

(XIV-11)

लोभः प्रवृत्तिरारम्भः कर्मणामशमः स्पृहा ।
रजस्येतानि जायन्ते विवृद्धे, भरतर्षभ ।

lobhaḥ prāvrttir ārambhah kārmanām asamaḥ spṛhā
rajāsy etani jāyante vivrddhe bharatarsābha

"Greed, outgoing energy, undertaking of actions,
restlessness, envious these are born
of the increased Mobility, O best of Bharatas!"

(XIV-12)

अप्रकाशोऽप्रवृतिश्च प्रमादो मोह एव च ।
तमस्येतानि जायन्ते विवृद्धे कुरुनन्दन ।

aprakāso pravrttis ca pramado moha eva ca,
tamasy etani jayante vivrddhe kurunandanā.

"Darkness, stagnation and heedlessness and also
delusion- these are born of the increase
of Inertia, O joy of the Kurus!"

XIV-11,12,13

In the aphroisms of Bhagvad Geeta given above, Lord Krishna has described the attributes of the three Gunas of Prakriti, not only in physical terms but also in terms of human emotions and experiences. The Gunas, as we have seen are the three patterns of vibrations when they superimpose upon one another. The patterns remain the same whether we observe them in the physical, emotional or intellectual plane. It is interesting to corelate the same attribute in the three planes of our consciousness. For example, Tamas is darkness, i.e.blackness in the physical plane, it is greed and attachment in the emotional plane and it is unwisdom or stupidity in the intellectual plane.

Similarly the three Gunas discriminate between all other perceptions and activities. We can classify food into three classes or our mentality, or our worship or charity of alms. All these classifications are given in the Geeta in the seventeenth discourse. Here are the classifications of food:

"The foods that augment vitality, energy, vigour, health, joy and cheerfulness, delicious, bland,substantial and agreeable, are dear to the pure.

आयुः सत्त्वबलारोग्यसुखप्रीतिविवर्धनाः ।
रस्याः स्निग्धाः स्थिरा हृद्या आहाराः सात्त्विकप्रियाः ।

ayuḥsattvabalārogyasukhaprītivivardhanāh
rasyāh snigdhāḥ sthira hardyā āhārah sāttvikapriyāḥ
(XVII-8)

कटुम्ललवणात्युष्णतीक्षणरुक्ष विदाहिनः ।
आहारा राजसस्येष्टा दुःखशोकामयप्रदाः ।

katvamlalavaṇātyuṣnatiksṇarukṣavidāhinah,
ahara rajasasye sta duhkhasokamayapradah

यातयामं गतरसं पूति पर्युषितं च यत् ।
उच्छिष्टमपि चामेध्यं भोजनं तामसप्रियम् ।

yātayāmaṁ gatarasaṁ pūti paryusitaṁ ca yat,
ucchiṣṭam api cā medhyaṁ bhojanam tāmasapriyam,
(XVII-10)

"The passionate foods that are bitter,
sour, saline, over-hot pungent, dry and burning
and which produce pain, grief and sickness." (XVII-9)

"That which is stale and flat, putrid and corrupt,
leavings also and unclean, is the food
dear to the dark."

XVII-8,9,10

LOVE OF GOD - BHAKTI SUTRA:

The Yogic method of meditation requires that we free our brain of all resonant vibrations so that it may become transparent and clean to receive the Divine vibratoins of the higher planes of consciousness. In the normal course the brain switches from lower planes of consciusness to higher ones only when the vibrations of lower frequency are suppressed (Cit-vrtti-nirodha). This is, however, not the only method. Bhakti Yoga is the other way. One can attempt to tune to a divine vibration directly and resonate with it so much that it overtakes the brain and drives out all other vibrations. The same purpose would then be achieved. The process involved to resonate the brain to a specific vibration is "love". By loving intensely an individual or a Deity, we surrender our will and merge into the personality of the other. The 'love' here is not physical infatuation or passionate love, but a kind of intense devotion.

Here are a few aphorisms from **Bhakti-Sutra** of Narada:
(Translation by Dr.I.K.Taimni)

तत्रापि न माहात्म्यज्ञानविस्मृत्यपवादः

"Tatrāpi na mahātmyajnana-vismṛty apāvadāh."

(Even in the intense devotion of a devotee felt towards an incarnation of God, there should be no forgettin of the greatness of Divinity of the obect of devotion in order to avoid reproach or scandal).

तद्विहीयं जाराणमिव ।

"Tad-vihinam jaranam iva."

(Without the kind ofattitdutementioned above the love of a bhakta will be like the passionate love of a paramour)

नास्त्येव तस्मिंस्तत्सुखसुखित्वम ।

"Nasty eva tasminsat-sukhasukhitvam."

(What distinguishes true love from false passionate love is the fact that the passionate lover does not consider the happiness of the beloved as his sole concern but is mainly concerned about his own happiness.)

सा तु कर्मज्ञानयोगेभ्योऽप्यधिकतरा ।

"Sa tu karma-jñāna-yogebhyo 'pyuadhikātarā."

(It the path of devotion is superioer to that of action, knowledge and Yoga of Patanjali.)

फलरुपत्वात् ।

"Phala-rupatvat."

(Because the result of making the effort to develop devotion is more intense devotion).

ईश्वरस्याप्य भिमानिद्वेषित्वाद् देन्यप्रियत्वाच्चं

"Īsvarasyāpy ābhimāni-dveṣtivād dainya-priyatvāc ca."

(The path of devotion is higher than others also because of God's aversion to egotism and love of meekness.)

Bhakti-Sutra of Narada
22,23,24,25,27

The Science of Awakening Consciousness

About the author...

H.C. Mathur, the author of this book is a telecommunications engineer who currently (1990) is the Adviser (Human Resource Development) in the **department** of Telecommunications, Government of India. Born in 1932, Mathur graduated in Physics from St. Stephens's College of Delhi and then pursued his engineering education at Indian Institute of Science, Bangalore. He is a member of the Indian Telecommunications Service of the central government and has served in this capacity in many branches of the department of telecommunications in different parts of the country. He has travelled extensively both in India and abroad working in the field of high technology telecommunications. He was appointed as an expert of International Telecommunication Union under the United Nations to serve in the friendly islands of the Kingdom of Tonga. It was in this pacific country that Mathur became interested in Indian mythology and did extensive reading and research on Patanjali's Yoga Sutras and the Upanishads. Combined with his basic knowledge of fundamental physics and information theory, he has been able to interpret the obscure mythological concepts of the phenomenon of life and the planes of consciousness in terms of scientific principles of information carrying vibrations. The author hopes that this book will prove to be interesting and informative to students with a scientific bent of mind who are equally curious about the occult teachings of Indian mythology.

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